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**SPRINGFIELD TECHNICAL COMMUNITY COLLEGE**      **1985-1986 CATALOG**

**1985-86**  
**Springfield Technical Community College**  
**One Armory Square**  
**Springfield, Massachusetts 01105**  
**(413) 781 - 7822**

**STATEMENT OF NONDISCRIMINATION**

Springfield Technical Community College is an Affirmative Action/Equal Opportunity Employer, and does not discriminate on the basis of race, color, national origin, sex or handicap status in its educational programs in admission to, access to, treatment in, or employment in its programs or activities as required by Title VI, Civil Rights Act of 1964; Title IX, Educational Amendments of 1972; and Section 504 of the Rehabilitation Act of 1973; and regulations promulgated thereunder 34 C.F.R. Part 100 (Title VI), 34 C.F.R. Part 104 (Section 504) 34 C.F.R. Part 106 (Title IX). All inquiries should be directed to the College's Affirmative Action Officer, who is also the Title IX and Section 504 Coordinator.

**INFORMATION SUBJECT TO CHANGE**

This catalog is published as a convenient source of information for prospective students and for the general public. To allow for unforeseen developments that may occur along budgetary or other lines, the College reserves the right to add or delete courses and programs or to revise tuition fees and insurance requirements described herein.

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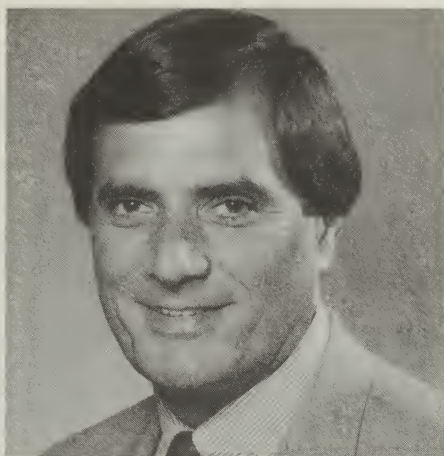


# ACADEMIC CALENDAR 1985-86

WEEK	DATES		FALL SEMESTER 1985
	Aug. 26-Aug. 30	Wed., Aug. 28	<b>FACULTY MEETING - 9:00 A.M.</b> Division/ Department Meetings <b>REGISTRATION DAY</b> 8:30 A.M.-3:00 P.M. <b>DROP/ADD BEGINS</b>
		Thurs., Aug. 29	
1	Sept. 2 - 6	Mon., Sept. 2 Tues., Sept. 3	<b>LABOR DAY - HOLIDAY</b> <b>CLASSES BEGIN 8:00 A.M.</b> <b>LATE REGISTRATION</b> Students Meet With Advisors
		Tues. - Fri. Sept. 3 - 6 Fri., Sept. 6	<b>DROP/ADD ENDS</b>
2	Sept. 9 - 13		
3	Sept. 16 - 20		
4	Sept. 23 - 27		
5	Sept. 30-Oct. 4		
6	Oct. 7 - 11		
7	Oct. 14 - 18	Mon., Oct. 14 Wed., Oct. 16	<b>COLUMBUS DAY-NO CLASSES</b> <b>CLASSES FOLLOW A MONDAY SCHEDULE</b> <b>MID-SEMESTER GRADES DUE IN REGISTRAR'S OFFICE</b>
8	Oct. 21 - 25	Fri., Oct. 25	
9	Oct. 28 -Nov. 1		
10	Nov. 4 - 8	Mon., Nov. 4	Distribution of Mid-Semester Grades and Spring 1986 Registration Booklet to Students
		Thurs., Nov. 7	<b>SPRING, 1986 PRE-REGISTRATION BEGINS</b> Students Meet With Faculty Advisors and Complete Pre-Registration in the Registrar's Office
11	Nov. 11 - 15	Mon., Nov. 11 Tues., Nov. 12	<b>VETERAN'S DAY-NO CLASSES</b> <b>CLASSES FOLLOW A MONDAY SCHEDULE</b>
12	Nov. 18 - 22	Wed., Nov. 20	<b>Last Day to Pre-Register for Spring, 1986 Semester</b>
13	Nov. 25 - 29	Thurs.-Fri. Nov., 28 - 29	<b>THANKSGIVING RECESS-NO CLASSES</b>
14	Dec. 2 - 6	Fri., Dec. 6	<b>Last Day to Withdraw From a Course Without Penalty</b>
15	Dec. 9 - 13	Fri., Dec. 13	<b>LAST DAY OF CLASSES</b>
16	Dec. 16 - 20	Mon.-Fri. Dec. 16 - 20 Thurs., Dec. 26	<b>FINAL EXAMS</b> <b>FINAL GRADES DUE IN REGISTRAR'S OFFICE</b>
	Dec. 26-Jan. 17		<b>SEMESTER BREAK</b>

WEEK		DATES	SPRING SEMESTER 1986
1	Jan. 20 - 24	Mon., Jan. 20	<b>FACULTY MEETING 9:00 A.M.</b> Division/ Department Meetings
		Tues., Jan 21	<b>REGISTRATION DAY</b> 8:30 A.M.-3:00 P.M. DROP/ADD BEGINS
		Wed., Jan 22	Classes Begin 8:30 A.M.
		Tues.-Fri. Jan. 21 - 24	<b>LATE REGISTRATION</b> Students Meet With Advisors
		Fri., Jan 24	<b>DROP/ADD ENDS</b>
2	Jan. 27 - 31		
3	Feb. 3 - 7		
4	Feb. 10 - 14		
5	Feb. 17 - 21	Mon., Feb. 17	<b>WASHINGTON'S BIRTHDAY-NO CLASSES</b>
		Wed., Feb. 19	<b>CLASSES FOLLOW A MONDAY SCHEDULE</b>
6	Feb. 24 - 28		
7	Mar. 3 - 7		
8	Mar. 10 - 14	Fri., Mar. 14	<b>MID-SEMESTER GRADES DUE IN REGISTRAR'S OFFICE</b>
9	Mar. 17 - 21	Mon., Mar. 17 Thurs., Mar. 20	<b>EVACUATION DAY-NO CLASSES</b> <b>CLASSES FOLLOW A MONDAY SCHEDULE</b>
	Mar. 24 - 28	Mon.-Fri. Mar. 24 - 28	<b>MID-SEMESTER BREAK-NO CLASSES</b>
10	Mar. 31-Apr. 4	Wed., Apr. 2	Distribution of Mid-Semester Grades and Fall, 1986 Pre-Registration Booklet to Students.
11	Apr. 7 -11	Wed., Apr. 9	<b>Fall, 1986 Pre-Registration Begins</b> Students Meet With Faculty Advisors and Complete Pre-Registration in the Registrar's Office
12	Apr. 14 - 18	Fri., Apr. 18	<b>Last Day to Pre-Register for Fall, 1986 Semester</b>
13	Apr. 21 - 25	Mon., Apr. 21 Fri., Apr. 25	<b>PATRIOTS' DAY-NO CLASSES</b> <b>CLASSES FOLLOW A MONDAY SCHEDULE</b>
14	Apr. 28-May 2	Fri., May 2	<b>Last Day to Withdraw From a Course Without a Penalty</b>
15	May 5 - 9	Fri., May 9	<b>LAST DAY OF CLASSES</b>
16	May 12 - 16	Mon.-Fri. May 12 - 16	<b>FINAL EXAMS</b>
	May 19	Mon., May 19	<b>FINAL GRADES DUE IN REGISTRAR'S OFFICE</b>
	May 29	Thurs., May 29	<b>HONORS CONVOCATION</b>
	May 31	Sat., May 31	<b>COMMENCEMENT</b>

## President's Message



Welcome to Springfield Technical Community College, the largest and most comprehensive institution in the Massachusetts community college system, with over 7,000 students in the Day and Evening Divisions, offering degrees or certificates in over 55 different programs. The College has a long-standing commitment to provide educational programs of the highest quality.

Our major strength lies in our ability to attract faculty and staff committed to the goals and objectives of the College and dedicated to responding to the needs of our students through personalized attention. The College's faculty combine a high degree of theoretical knowledge with practical experience in their field. Our staff are dedicated to making your stay with us a rewarding and enjoyable experience.

This, combined with the diversity of our program offerings, our central location on the beautiful and historic Springfield Armory Grounds, and our professional commitment to maintain excellence, combine to make Springfield Technical Community College the finest institution of its kind. An added dimension to enrich your college years are extracurricular activities such as athletics, drama society, and a wide variety of student organizations.

We are prepared to provide you with the educational background and support services so vital in today's fast-paced society.

Once you become a part of the STCC family, the relationship does not end when you graduate. As an alumnus, you have ready access to Placement services, the STCC Library, and the Counseling Center, as well as becoming a member of the STCC Alumni Association. Courses and workshops offered by the Division of Continuing Education are designed to help you keep pace with the rapidly-changing skills and knowledge in your field.

We are *your* community college, and we are here to serve your needs.

Andrew M. Scibelli,  
President

# General Information

## THE COLLEGE

### HISTORY

In 1947 the State Board of Education determined that the Commonwealth should establish a system of community colleges, and in 1958, the Massachusetts Board of Regional Community Colleges was created to oversee the master plan for the development of the community college system.

The concept of creating a post-secondary technical school in Springfield originated in 1964 when the City established Springfield Technical Institute. The demand for educational services soon outstripped the facilities, and a solution was found when the Armory was scheduled to be deactivated. A community college was formed, under the jurisdiction of the Massachusetts Board of Regional Community Colleges, and in the fall of 1967 the first class of the new college began at the Armory Square campus. On March 1, 1981, the Massachusetts Board of Regents of Higher Education assumed responsibility for all of the Commonwealth's public institutions of higher education. The Springfield Technical Community College Board of Trustees also assumed its responsibilities on March 1, 1981 and, together with the Board of Regents, is the governing body of the College, replacing the STCC Advisory Board and the Massachusetts Board of Regional Community Colleges.

An initial enrollment of 400 students and a faculty of 20 began what is now the largest and most comprehensive community college in the Commonwealth. The change from a city technical institute to a degree-granting community college resulted in STCC providing thousands of trained graduates for the career opportunities that exist in the Greater Springfield community.

The thirty-four acre campus contains a blend of the old and new. New academic facilities as well as historic buildings exist on this National Historic Landmark founded by George Washington in 1789. New facilities for the Humanities, Physical Sciences, Nursing, Health and Human Services, and Engineering Technologies are surrounded by a distinctive iron fence cast in the mid-1800's from old cannon.

STCC is proud of its brief but impressive history, and the College will continue to dedicate itself to serving the educational and cultural needs of the citizens of the Greater Springfield community and the Commonwealth at large.

### PHILOSOPHY

Springfield Technical Community College, founded in 1967, is a co-educational, publicly supported institution. After 18 years of growth and development, the College reaffirms its goal of combining education for a career



with education for life. The College maintains an "open door" admissions policy, which gives access to higher education to a student body with diverse needs and goals.

We believe that it is the mission of the College to assist students in the choice, and preparation for, careers; to encourage performance to meet the highest professional standards; to provide opportunities for continuing education and professional enrichment. At the same time, we attempt to develop and foster an understanding of scholarship through the Liberal Arts.

Education for life is accomplished through efforts to develop in students the capacity for critical thinking, the ability to communicate effectively, an appreciation of the arts and humanities, and an understanding of the technological basis of modern society. The College recognizes the need for students to deal with the rapid pace of change and such global concerns as those related to technology, environment, population, and peace.

Springfield Technical Community College aims to assist in the development of people who are educated in mind, responsive to civic and social obligations, capable of adjusting to change, and able to respond creatively to the demands of their chosen careers.

## **GOALS**

1. To provide access to higher education for all, with special attention to the needs of the economically and educationally disadvantaged. The College pays particular attention to those whose previous educational experiences have been unsatisfactory, by providing a supportive learning environment which instills in our students renewed confidence in their capabilities.

2. To offer the educational programs necessary to meet the current anticipated needs of our students, the community, and the Commonwealth, including:

(a) Developmental programs to upgrade student skills in mathematics, communications, and science to the college entry level.

(b) Career programs of one or two years' duration, leading to meaningful employment of our graduates in health, technical, business, and service occupations.

(c) Cooperative Educational experiences fostering student personal growth and unifying student academic and career goals with the employment needs of the local community.

(d) Courses of study which parallel the first two years of collegiate study in liberal arts, engineering, computer information systems, and science.

(e) Continuing Education credit and non-credit courses offered at convenient hours and locations.

3. To maintain the highest possible standards of academic achievement and performance.

4. To insure the continuing quality and relevance of our programs.

5. To build and maintain a modern physical plant.

## **OBJECTIVES**

1. To continue to serve this geographic region in terms of the educational needs of its people, as well as the educational needs of business, industry, and health services, government and the community at large.
2. To provide equal access to higher education by maintaining an open-door admissions policy.
3. To develop and maintain itself as a comprehensive, multi-purpose institution offering quality, low-cost, collegiate level courses and programs, with its major thrust in the career oriented programs. This is accomplished by offering:
  - (a) A broad range of technological, occupational, and general education courses for both credit and non-credit;
  - (b) A program parallel to the first two years of collegiate study in liberal arts, engineering, computer information systems, and science;
  - (c) Extended education to students in those areas where programs beyond a two-year duration are not readily available;
  - (d) A program of continuing education, offering a variety of courses and degree granting programs at convenient hours and locations;
  - (e) Ready access to the professional and physical resources of the College to representatives of business/industry and community organizations for the development and presentation of seminars, short courses, and conferences which meet the training and educational needs of these groups.
4. To provide to both regular and prospective students the testing, guidance, and counseling services of the College in such areas as:
  - (a) choice of technical field of occupation;
  - (b) choice of academic courses and programs;
  - (c) occupational planning and placement;
  - (d) transfer to other institutions of higher learning;
  - (e) resolution of personal problems which tend to inhibit or interfere with the student's educational progress.
5. To commit the College to excellence in teaching as its most vital work by:
  - (a) selecting faculty and staff members who bring both knowledge and a desire to work with community college students;
  - (b) encouraging and assisting in the professional growth of faculty and staff members;
  - (c) promoting innovation in educational practices and policies;
  - (d) providing an intellectual environment which will promote the development of social consciousness and maturity in students through academics, community involvement, and cultural events.
6. To promote educational and cultural services to the community and region.
7. To develop public interest and support for this institution through a public relations program involving the efforts of the College staff, the students, and the office of Public Relations.

8. To develop and maintain an on-going communication exchange with other educational institutions in the region, the state, and the nation. This includes high schools, community colleges and senior colleges, and various boards and agencies, both private and public.
9. To promote an educational dialogue among students, faculty, administrators, and governing and advisory boards in order to enhance further the objectives of the College.
10. To undertake a periodic review of the College on a planned and systematic basis as to its objectives, policies, organizations, and long and short range plans. The purpose of such a review is to avoid rigidity and stagnation and to provide for change and progress in the curriculum.
11. To identify the employment needs of the community and to provide, as rapidly as possible, highly skilled people to meet these needs; also, in collaboration with business, political, and industrial leaders, to establish programs to attract new industries to the area by providing personnel and training for them.
12. To continue to implement the affirmative action plan of the College with the goal of increasing the representation of qualified minority, female, and handicapped persons as students and as members of the institution's faculty and staff at all levels.

## **ACCREDITATION**

Springfield Technical Community College is accredited by the New England Association of Schools and Colleges, Inc., which accredits schools and colleges in the six New England states. Accreditation by the Association indicates that the institution has been carefully evaluated and found to meet standards agreed upon by qualified educators.

STCC has recently been awarded the maximum accreditation period of ten years.

The College is approved by the Board of Collegiate Authority, Massachusetts Department of Education; by the Massachusetts Rehabilitation Commission; by the United States Office of Education for listing in the Directory of Higher Education; for the National Defense Student Loan Program; for federal assistance from any unit of the Department of Health, Education, and Welfare; by the United States Veterans Administration for the admission of veterans and war orphans; by the United States Department of Justice as a place of study for non-immigrant students; and by the United States Internal Revenue Service as a non-profit organization.

Individual programs in the Health/Human Services Division are accredited as follows:

Dental Assistant: American Dental Association

Dental Hygiene: American Dental Association

Medical Lab. Asst.: American Medical Assoc., Committee on Allied Health Education and Accreditation

Nuclear Medicine: American Medical Assoc., Committee on Allied Health Education and Accreditation

Radiation Therapy: American Medical Assoc., Committee on Allied Health Education and Accreditation



Radiologic Technology: American Medical Assoc., Committee on Allied Health Education and Accreditation  
Respiratory Therapy: American Medical Assoc., Committee on Allied Health Education and Accreditation  
Medical Assistant: American Medical Association, Committee on Allied Health Education and Accreditation  
Physical Therapy Assistant: American Physical Therapy Association  
Nursing: National League for Nursing, and approved by the Mass. Board of Registration in Nursing

## Admissions Information

### ADMISSION

Springfield Technical Community College encourages applications without regard to age, sex, race, religion or national origin. Admission to the College requires a high school diploma or its equivalency. The Dean of Admissions may determine in some cases that a mature, responsible adult may be admitted to the College without the diploma or its equivalency. This in no way guarantees such a student entrance into a specific academic program.

Every consideration will be given to any applicant who possesses a diploma without regard to the curriculum pursued in high school. The applicant should take note, however, of the numerous requirements demanded by specialized college programs (see Prerequisite page).

A high school equivalency diploma (General Education Development Test-GED) may be earned by passing tests administered by the College several times each year. Further information about the tests may be obtained from the Division of Continuing Education.

*Students are advised to study carefully special requirements that are established by the program into which they seek admission.*

Some programs of the College require specific minimum scores to be achieved by the applicant on the Scholastic Aptitude Test (SAT) of the College Entrance Examination Board. Admissions Telephone Number: 781-7822, Extension 3855.

### RE-ADMISSION

Any student who has been dismissed for academic deficiencies may be re-admitted by bringing his cumulative quality point average (CQPA) up to the minimum standard required by the College (See Academic Standing). Any student who has attended summer or evening school and has raised his CQPA to the acceptable level, thereupon should reapply formally to the Dean of Admissions.



## **APPLICATION PROCEDURE**

Students desiring admission to the College may obtain an application by writing to the Dean of Admissions, Springfield Technical Community College, One Armory Square, Springfield, MA 01105. Students attending high schools in the Greater Springfield area may expedite the application process by asking their guidance departments for an application form. Applications should be filled out completely and returned to the STCC Cashier's Office as soon as possible. This application must be accompanied by a non-refundable application fee in the amount of \$10 for in-state students or \$35 for all out-of-state or foreign students in check or money order payable to STCC. This is a required fee which goes directly into the General Fund of the Commonwealth. It is each applicant's responsibility to insure that a transcript of his/her high school marks is sent to the STCC Admissions Office. The Admissions Office cannot accept the responsibility for obtaining transcripts.

Springfield Technical Community College maintains an open-door admissions policy, but the rapidly increasing number of applicants necessitates early application for admission. Applicants should have their applications on file as early as possible, preferably before January 31 for any given academic year. Applications received after January will be processed; if openings exist within programs, applicants who apply after January 31 will receive acceptance.

In addition, transcripts from all colleges previously attended must be submitted to the College. Applications cannot be processed until all transcripts are received.

## **APPOINTMENTS FOR INTERVIEWS**

Although interviews are not required, applicants are encouraged to seek help with career choices by exploring various programs with the counselors and staff. Interviews and tours may be arranged by phoning or by writing the Admissions Office for an appointment; Telephone 781-7822, Extension 3855.

## **TRANSFER INTO STCC**

Applicants who have had previous college experience must submit all college transcripts whether or not they are seeking transfer credit. The College accepts a maximum of 45 credits in transfer toward an STCC degree, for courses taken at other institutions. Only courses in which the student has received a "C" grade or better and which are similar in content to those required in the student's program at STCC will be accepted. Transfer applications are usually accepted for admission to the College in both September and January; however, the number of programs open for admission in January is limited. Please contact the Admissions Office for more information.

## **CLEP AND CHALLENGE EXAMINATIONS—ADVANCED PLACEMENT**

The College may award up to 30 credits to persons who successfully complete examinations in specific subject areas given at the College under the aegis of the College Level Examination Program (CLEP), or a series of Challenge Exams developed by the College.

The CLEP subject examinations cover a wide range of disciplines and allow applicants to demonstrate proficiency in areas where they have acquired knowledge through non-traditional learning situations. Credits received by CLEP examinations allow the College to waive introductory courses which the student would normally be required to take.

The College has produced challenge examinations in subject-matter areas not found in the CLEP battery so that people who wish to demonstrate competence in specialized areas may do so. Students who feel that they possess above average competence in a subject area should not hesitate to consult the Dean of Admissions for further information, consultation and testing.

High scores on the Advanced Placement Examination of the College Entrance Examination Board will be evaluated by Admissions. Specific scores as approved by the College may allow the student applicant to be exempted from certain courses.

## **PLACEMENT TESTING**

As part of the Admissions program at Springfield Technical Community College, a Placement Testing Program is administered by the Individualized Learning Center (Building 17, Room 425). Placement tests in mathematics, English and reading comprehension provide information for assigning students to appropriate courses. Tests in mathematics and English are required for most incoming freshmen. Placement testing is required before registering for classes.

## **OUT-OF-STATE AND FOREIGN STUDENT INFORMATION**

Because of the lengthened processing time, out-of-state residents, as well as all non-United States residents, must have all application materials complete and on file with the STCC Admissions Office prior to August 1 in order to be considered for admission to the Fall semester (December 1 for admission to the Spring semester).

Prospective students who are neither United States citizens nor in the United States on permanent visas must have taken the Test of English as a Foreign Language and have the test score entered as a part of their application for admission. Those who score below 525 on the TOEFL may enroll only for classes entitled English as a Second Language (ESL).

# Minimum Prerequisites for Admission

PROGRAM	DEGREE OR CERT.	LICENSE AFFILIATION OR DESIGNATION POSSIBLE	MATH	SCIENCE AREA	OTHER ACADEMIC ADD. REQ.
Advanced Metals Machining	Degree		Alg. 1, Geom.*		SAT*
Automotive Technology	Degree		Alg 1	Physical	
Bio-Medical Instrumentation	Degree		Alg 2	Physical	SAT*
Business Administration*****					
Accounting*****	Degree		Alg 2*		SAT*
Finance*****	Degree		Alg 2*		SAT*
Management*****	Degree		Alg 2*		SAT*
Option: Small Business Management*****	Degree		Alg 2*		SAT*
Marketing*****	Degree		Alg 2*		SAT*
General Business/Transfer Compact Option:*****	Degree		Alg 2*		SAT*
Civl Engineering Tech.	Degree		Alg 2	Physical	SAT
Computer Information Systems/Data Processing	Degree		Alg 2*		SAT*
Computer Maintenance Tech.	Degree		Alg 2 Trig.*	Physical	SAT
Cosmetology	Cert.	National License			
Dental Assistant	Cert.	A.D.A.A. Nat'l Cert.	Alg 1	Bio & Lab, Typing	SAT*
Dental Hygiene	Degree		Alg 2	Bio/Chem & Geom. Labs	SAT***
Drafting & Design Tech.	Cert.		Alg 1	Physical	
Early Childhood Education	Degree	Nat'l Credential-Child Development Associate			SAT** & Personal interview
Electrical Technology	Degree		Alg 2	Physical	SAT
Electronic Technology	Degree		Alg 2 Trig.	Physical	SAT
Option: Microprocessing Technology	Degree		Alg 2 Trig.	Physical	SAT
Engineering & Science Transfer*****	Degree		Alg 2 Trig.	Chem/Physics	SAT
Option: Computer Science Transfer*****	Degree		Alg 2	Chem/Physics	SAT
Environmental Technology	Degree	Certification	Alg 1	Chemistry*	SAT*
General Studies	Degree				SAT*
Graphic Arts Technology	Degree		Alg 1	Physical	SAT*
Heat/Power/Air Conditioning	Degree	Cert. 2nd Class Lic.	Alg 2	Physical*	SAT*
Option: Solar Energy	Degree	Cert. 2nd Class Lic.	Alg 2	Physical*	SAT*
Human Services Associate					
Option: Generalist	Degree	Nat'l Organization of Human Services Educators			SAT*
Option: Gerontology	Degree	Nat'l Organization of Human Services Educators			SAT*
Instrumentation Technology	Degree		Alg 2	Physical	
Landscape/Plant Science Tech.	Degree		Alg 1	Physical	SAT*
Laser Electro-Optics Tech.	Degree	Nat'l License	Alg 2 Trig.	Physical	SAT*
Law Enforcement/Crim. Justice	Degree				SAT*
Liberal Arts Transfer*****	Degree		Alg 2*		SAT*
Machine Design Technology	Degree		Alg 2 Trig.*	Physical Mech. Draw.	SAT*
Medical Assistant	Degree	Nat'l Certificate		Biology, Typing	SAT

PROGRAM	DEGREE OR CERT.	LICENSE AFFILIATION OR DESIGNATION POSSIBLE	MATH	OTHER ACADEMIC ADD.	
				SCIENCE AREA	REQ.
Medical Laboratory Technician	Degree	Nat'l Registration	Alg 2	Biology/ Chemistry	SAT +
Nuclear Medicine Technology	Degree	2 Nat'l Certifications	Alg 2	Bio/Chem.	SAT +
Nursing	Degree	R.N.	Alg 2	Bio/Chem.	SAT***
Physical Therapist Assistant	Degree		Alg 2	Bio/Chem.	SAT***
Radiation Therapy Tech.	Degree	Nat'l Certification	Alg 2	Bio/Chem.	SAT +
Radiologic Technology	Degree	Nat'l Certification	Alg 2	Bio/Chem.	SAT
Respiratory Therapy	Degree		Alg 2	Bio/Chem.	SAT
Surgical Technology	Degree	Nat'l Certification	Alg 2	Bio/Chem.	SAT
Office Systems/ Secretarial Sciences					
Clerical Office Assist.	Cert.				SAT*
Executive Office Administration/Executive Secretarial	Degree	NSA, IWP, CPS Exam			SAT*
Option: Word Processing	Degree	NSA, IWP, CPS Exam			SAT*
Bilingual W.P.	Degree	NSA, IWP, CPS Exam			SAT*
Legal Office Admin./	Degree	NSA, IWP, NALS, CPS Exam			
Legal Secretarial		PLS Exam			SAT*
Option: Word Processing	Degree	NSA, IWP, NALS, CPS Exam			
		PLS Exam			SAT*
Medical Office Admin./	Degree	NSA, IWP, CPS Exam			SAT*
Medical Secretarial					
Word Processing					
Management	Degree	IWP, NOMA, AMA			SAT
Telecommunications Technology	Degree				SAT*

\* Not mandatory but recommended.

\*\* These programs will require a minimum combined SAT total score of 750.

\*\*\* These programs will require minimum SAT score of 450 each in Verbal and Math.

\*\*\*\* These programs will require one of the listed science requirements—two others are strongly desired.

\*\*\*\*\* Four-Year College Transfer Program. Business students should see their advisor or the Transfer Counselor to determine appropriate concentration in their second year based on four-year college choice.

+ These programs will require minimum SAT scores of 400 each in Verbal and Math.

Information as of June, 1985

## Tuition and Fees

### TUITION FEE

The Commonwealth of Massachusetts has set tuition at \$354 per semester for State residents and \$1,200 per semester for non-residents. Part-time students pay \$29.50 per credit, while part-time non-resident students pay \$100 per credit. The charge for auditing a course is set at \$21 per course.



Under an agreement among the New England States, students from any of the six states may attend college in another of the six states for \$442.50 per semester, or \$36.87 per credit, provided that the program desired is not available in their state or that the community college is closer than that in the home state.

Tuition and fees listed above are those as of June, 1985, and are subject to change without further notice.

### **STUDENT ACTIVITY FEE**

To promote athletics, student affairs, clubs and scholastic endeavors such as student publications, each student must pay a student activity fee. The rate is set yearly by the student government and is payable each semester.

### **PARKING FEE**

Parking is limited on campus. Seniors may park on campus up to the limit of space. Parking fees will be established each year. Off-campus parking is available near the College for varying prices.

### **GRADUATION FEE**

To cover the cost of the graduation ceremony and the graduate's cap and gown, the College assesses each graduating student a \$20 fee. This fee is payable prior to graduation.

### **INSURANCE**

The Commonwealth of Massachusetts requires each student to purchase through the College an accident insurance policy for a minimum charge which is part of the Student Activities Fee. Optional plans under this policy may be purchased to provide hospitalization and twenty-four hour protection. Information about insurance will be sent to each admitted student. Students in Allied Health and Nursing are required to carry liability insurance in addition to the accident policy.

### **BOOKS AND SUPPLIES**

Estimated costs for books and supplies vary by department, but \$175 per semester should pay for most books and supplies. The College bookstore, operated by an outside concern, provides, at reasonable costs, many of the items that the student requires during his stay at STCC. Students are also required to pay a LIM fee for all courses (See Summary of Tuition and Fees).

### **PAYMENT OF BILLS**

All tuition and fees are payable before each semester begins. No deferred payment plans or partial payment plans are available. If payment is to be made by agencies or scholarship programs, arrangements must be made in advance with the Financial Aid Office. All student financial obligations

must be satisfied before a student is considered properly registered. No grades, transcripts, recommendations, degrees or other services will be provided to students with outstanding financial obligations.

## **VETERANS**

Veterans may be eligible for a tuition waiver while attending a State-supported college or university. Note: Division of Continuing Education is not State-supported.

The guidelines that have to be met in order to receive a tuition waiver are as follows:

1. Military service must be accredited to the Commonwealth of Massachusetts (i.e., "Home of Record" on DD-214 must reflect city or town in Massachusetts).
2. Veteran must have served 181 consecutive days active duty.
3. Veteran must have served at least one day active duty on or before May 7, 1975.
4. Veteran must bring copy of DD-214 to the Office of Veterans Affairs (OVA).
5. Eligible veterans based on above criteria may use tuition waiver 20 years after date/separation from active duty or up to 130 credit hours.
6. Veteran must be in a matriculated status.

Those veterans attending the Division of Continuing Education must also be able to satisfy the above requirements. In addition, their entitlement to Federal G.I. educational benefits must have expired. For more information concerning the possibility of qualifying for a Massachusetts State tuition waiver, based on your military service, please contact the Office of Veterans Affairs on campus.

National Guard Personnel should contact the OVA for information concerning the possibility of their qualifying for a certificate of exemption based on their status as a National Guardsman through Day Division only.

The Office of Veterans Affairs operates on an open-door basis. Assistance is available in the following areas: academic counseling, veterans' benefits counseling, upgrading of discharges, disability claims and referral service.

## **TUITION REFUNDS**

Tuition refunds are made only to those students who officially withdraw from the College. In order to do this, a student should personally, or by written communication, notify the Registrar of his decision. The College will, thereupon, refund a portion of the student's tuition according to the following schedule established by State regulations:

Withdrawal during first week	90 percent
Withdrawal after one week	70 percent
Withdrawal after three weeks	50 percent
Withdrawal after four weeks	No Refund
All refunds are made by the State Treasurer and take approximately six (6) weeks.	

It should be noted that no provision is made for refunds of any other fees or charges except for tuition.

The first \$35 of tuition is non-refundable and is excluded from the refund computations.

## FOREIGN STUDENTS

Every student attending the College with a student visa must pay out-of-state tuition rates.

## SUMMARY OF TUITION AND FEES

Tuition and fees listed below are those as of June, 1985, and are subject to change without further notice.

Application Fee for Mass. Residents (non-refundable)	\$ 10
Application Fee for Out-Of-State Students (non-refundable)	35
Registration Fee (deductible from tuition, non-refundable)	35
Tuition for Mass. Residents (per semester)	354
Tuition (part-time) for Mass. Residents (per credit)*	29.50
Tuition for Out-Of-State Students (per semester)	1,200
Tuition for (part-time) Out-Of-State Students (per credit)*	100
Tuition Audit Course	21
Student Activities Fee (12 or more credits) per semester	21
Placement Test Fee	7
Late Registration Fee	5
Change of Course Fee/Per Course	3
Make-up Examination Fee	5
Student Insurance Required (approx.)	12.50
Supplemental 24 hour Accident & Sick Plan. See Dean of Student Services	118.50
Student Liability Insurance (approx.) mandatory - Allied Health & Nursing Students	12.50
Transcripts (each)	1
Graduation Fee (payable prior to graduation)	20
Laboratory Instructional Materials Fee (per credit)	3.50
Schedule Reprint Fee	1
Library Fee	5
Health Fee	2

\*12 credit hours per semester is the basis for full-time status.

## SENIOR CITIZEN TUITION EXEMPTION

There shall be no charge for tuition to any person 60 years of age or over for attending Springfield Technical Community College provided that the College is not over-enrolled. However, certain fees may still be charged. This tuition exemption policy also applies to evening and summer courses provided that the course has enrolled a minimum of seventeen regular paying students, and that there are seats available.

## DETERMINATION OF RESIDENT STATUS

An in-state student is defined as an American citizen or a permanent alien resident who has lived in Massachusetts for 6 continuous months with the intention of living in the state indefinitely. (See the back of the application for place to sign, and information on how some other New England residents can qualify for reduced tuition.)

Tuition for out-of-state residents and foreign students is \$1,200 per semester. Any person attending the College with a student visa must pay out-of-state tuition.

# Financial Aid

The purpose of the Financial Aid Office is to provide financial assistance for those students who would otherwise be unable to attend college because of economic limitations. Based on an individual's financial need, the Financial Aid Office allocates funds to assist eligible students in paying for the cost of their college education. Assistance is provided through several sources and a student may receive a combination of more than one type of aid. The amount and type of aid a student receives is subject to allocations received by the College and governed by federal, state, and College regulations.

## ELIGIBILITY REQUIREMENTS FOR RECEIVING FINANCIAL AID

The student must:

- \* be a United States citizen or a permanent resident
- \* be enrolled in a degree granting program
- \* be enrolled for a minimum of 6 credits
- \* be in good academic standing and be making satisfactory progress toward a degree
- \* not be in default of a student loan or owe a refund to the Pell Grant program at STCC

All students born after December 31, 1959 must complete and sign Selective Service Statement in order to be eligible for federal funds.

## APPLICATION PROCEDURE

The student must **Complete** both the FAF and the STCC Financial Aid Application forms to be considered for aid.



The FAF is the application used to apply for federal and state aid at STCC. This form is sent to the College Scholarship Service (CSS) Box CN 6311, Princeton, NJ 08451. The CSS will analyze this information and forward a Financial Aid Form Need Analysis Report to the Financial Aid Office. Students will receive an acknowledgement form from CSS confirming receipt of the FAF. This is for the student's records only.

The STCC Financial Aid Form must be completed in full and returned to the Financial Aid Office with the appropriate documentation verifying the parent's and/or student's income. Documentation may include a signed copy of parent's and/or student's Federal Tax Return and verification of non-taxable income such as AFDC, unemployment, social security benefits, and veterans benefits. A detailed list of non-taxable income is included on page 5 and 6 of the FAF. All information is considered confidential.

**Deadlines:** Applications are available year round, however due to limited funding students are urged to apply early. Applications received after April 1 are considered late. Students must submit applications for the Massachusetts State Scholarship before the March 1 deadline.

## **TYPES OF ASSISTANCE**

The following aid programs are available to students at STCC. Although most of these programs are for the students who demonstrate a financial need, also included are those programs not based on need.

### **A. GRANTS/SCHOLARSHIPS**

**PELL GRANT:** Is an entitlement grant available to eligible students who are currently enrolled in an institution of higher education or vocational school. Students are entitled to receive a Pell Grant for the duration of their undergraduate studies. Students who have a Baccalaureate Degree are not eligible.

**SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANT (SEOG):** Is a grant for students who demonstrate a financial need. Students who have a Baccalaureate Degree are not eligible.

**MASSACHUSETTS STATE SCHOLARSHIP:** Is an award for full-time (12 or more credits) undergraduate matriculated students. Students must not have received state scholarships for more than seven (7) previous semesters. Maximum yearly award at STCC is \$360. Eligible students must be legal residents of Massachusetts. Awards for this program are determined by the State Board of Regents of Higher Education.

**ADULT LEARNER PROGRAM:** Is a grant awarded to ADFC recipients based on financial need. Students must be enrolled for a minimum of six (6) credits.

### **B. LOANS**

**NATIONAL DIRECT STUDENT LOAN (NDSL)** Is a low interest (5%) loan. Repayment of the principal and interest does not begin until six (6) months after the student ends his/her studies or ceases to be at least a half-time student. Repayment of the principal may be extended over a ten (10) year period.

**U.S. PUBLIC HEALTH SERVICE - NURSING STUDENT LOAN PROGRAM (NL)** Is a low interest (6%) loan made available to students needing assistance in programs leading to a diploma or degree in Nursing. Repayment of the principal may be extended over a ten (10) year period.

**HIGHER EDUCATION LOAN PROGRAM (HELP)** Is a state and federally sponsored Guaranteed Student Loan (GSL) program. Applications may be obtained at most banks or other lending institutions. Guidelines for borrowers are set by the state agency; however, banks and other lending institutions have the option to impose additional requirements. Presently the interest is 8% with repayment commencing six (6) months after graduation or when the student drops below part-time status.

Federal regulations require that families with an adjusted gross income of \$30,000 or higher meet the "needs test" in order to be eligible for Federal interest benefits. Families with less than a \$30,000 adjusted gross income are automatically eligible for the interest subsidy. This became effective October 1, 1981. Students may borrow up to a maximum of \$2,500 per academic year. However a maximum loan of \$1250 is recommended for students less than full time.

### **C. TUITION WAIVERS**

**STATE TUITION WAIVER (TW)** Is an award to Massachusetts residents. Students must be enrolled in the day division and have a financial need. Priority is given to those students enrolled for at least 12 credits.

**TUITION REMISSION** Is a waiver of tuition available to children of STCC employees. This program is not based on financial need. Information is available in the College Personnel Office, Garvey Hall, Rm. 245.

### **D. STUDENT EMPLOYMENT**

**COLLEGE WORK STUDY (CWS)** Is a program designed to stimulate and promote the part-time employment of students who demonstrate a financial need. Students may work an average of 10-20 hours per week during the academic year. If funds are available, students may work up to 40 hours per week during summer and vacation periods. Work hours are arranged around class schedules at the current rate of \$3.35 per hour. Every attempt will be made to place students in job locations that complement or reinforce their educational goals.

**MASSACHUSETTS EDUCATIONAL EMPLOYMENT PROGRAM (MEEP)** Is a program providing employment opportunities for students related to their field of study. MEEP is awarded based on financial need. Students must be full time, and a legal resident of Massachusetts for at least one year.

**COOPERATIVE EDUCATION** Is a program whereby students can earn college credits by working in a job related to their field of study. This program is not based on financial need. (See page 47 for further information.)

**TUTORIAL ASSISTANCE PROGRAM (TAP)** Is a peer tutoring job available to students who demonstrate knowledge of a particular subject area. If interested the student should contact a faculty member in that curriculum and if selected, the student must fill out the appropriate forms in the Financial Aid Office. This program is not based on financial need.

## E. OTHER

There is a limited number of scholarships offered by the college and by private organizations in the greater Springfield area. This information is available in the Financial Aid Office, Garvey Hall South Wing, Student Services Center.

### HOW NEED IS DETERMINED

Each student applying for financial aid has a budget. This budget consists of direct educational costs for tuition, fees, books, and supplies, as well as those costs which are incurred by virtue of attendance such as transportation and lunch. In addition, all students have costs related to recreation and personal expenses. From these expenses available resources are deducted. These resources may include taxable and non taxable income, and a percentage of the assets of the student and/or the parents. Furthermore, the federal government assumes a student will work over the summer and make a contribution toward their educational expenses. The difference between the total expenses and the family contribution is the student's financial need.

### OBLIGATIONS AND RESPONSIBILITIES

All students must be enrolled for a **minimum** of six (6) credit hours (half-time status) per semester to be eligible for financial aid. Any student enrolled for less than full time (12 credits) will have their award prorated. **Enrollment status will be determined at the end of the Add/Drop Period for each semester.** Students who drop credits during this time will have their Pell Grant and Tuition Waiver reduced accordingly.

All students must notify the Financial Aid Office when a course(s) is dropped or a withdrawal from school is initiated. In these cases, the award amount which the student has already received will be evaluated to determine if the student must repay any portion of this award. Refund policies affecting tuition payments are listed in the college catalog. These policies, along with those established by the Office of Education, will be used in determining a student's possible repayment of a financial aid award.

**NATIONAL DIRECT STUDENT LOAN/NURSING STUDENT LOAN** recipients are required to report to the Business Office for an entrance interview before a check is disbursed. An exit interview is required upon graduation or separation from the college. Repayment of principal and interest does not begin until six months after the student terminates his or her studies.

**COLLEGE WORK STUDY** recipients must report to the Financial Aid Office for a job assignment. Failure to report for a work study placement within (2) two weeks from the first day of classes may result in termination of this award.

All students must notify the Financial Aid Office of any change in his/her and/or his/her parents' income status, as well as name and address changes. All students are required to notify the Financial Aid Office of any additional funds received from outside sources during the academic year (scholarships, student employment [co-op], tuition waivers, etc.). The Financial Aid Office is required to adjust the student's budget and/or revise his/her original aid award.



## **SATISFACTORY PROGRESS**

In accordance with federal requirements, the following policy on satisfactory academic progress became effective at the end of the Spring 1984 semester.

1. Students must register for at least six (6) credits each semester to be eligible for financial aid.
2. If students register for only six (6) or seven (7) credits, they must successfully complete at least six (6) credits.
3. Students registered for eight (8) to fifteen (15) credits must successfully complete at least 75% of the credits attempted.
4. Students registered for sixteen (16) or more credits must complete at least twelve (12) of the credits attempted.

**NOTE:** W's, I's, and F's are not considered courses successfully completed but are courses attempted.

In addition, the institution is required to establish a time schedule delineating the length of time within which a student could reasonably be expected to earn a degree. The schedule STCC has established is as follows:

### **Candidates for Associate Degree:**

Full-time student (12 or more credits)	6 semesters to earn a degree
Three-quarter-time student (9 - 11 credits)	8 semesters to earn a degree
Half-time student (6 - 8 credits)	10 semesters to earn a degree
General Studies students enrolled for 9 credits or more in developmental (remedial) courses in any one semester	8 semesters to earn a degree

### **Candidates for Certificate:**

Full-time student	3 semesters to earn a certificate
Part-time student	4 semesters to earn a certificate

THE STUDENT'S COMPLETE ACADEMIC HISTORY AT STCC WILL BE REVIEWED FOR PURPOSES OF SATISFACTORY ACADEMIC PROGRESS, INCLUDING CREDITS ATTEMPTED WHILE NOT RECEIVING FINANCIAL ASSISTANCE.

A student changing programs must be maintaining satisfactory academic progress in the original program to be eligible for aid in the first semester of the new program; the status of the student in the new program will be determined by the number of earned credits applicable to the new program.

Financial aid students who fail to pass the total credits listed in the following tables may not be eligible for financial aid in the next semester(s) of enrollment. In order to return to satisfactory academic progress, students must pass the appropriate number of credits.



Semester	Minimum Credits Passed	Minimum Cumulative Grade Report Average
<b>Full time students (12 or more)</b>		
1 and 2	21	1.5
3 and 4	42	1.7
5 and 6	64	2.0
<b>¾ time students (9-11)</b>		
1 and 2	16	1.5
3 and 4	32	1.7
5 and 6	48	1.9
7 and 8	64	2.0
<b>½ time students (6-8)</b>		
1 and 2	12	1.5
3 and 4	24	1.5
5 and 6	36	1.7
7 and 8	48	1.9
9 and 10	64	2.0

## ACADEMIC STANDING

The Financial Aid Office will abide by the college's policy for academic standing for day students. The same academic criteria will be applied to all students enrolled in the Division of Continuing Education.

Furthermore, any student who received financial aid as a **full-time** student (12 or more credits) for two consecutive semesters and did not successfully complete at least 12 credits for one of those semesters, will be denied further financial aid.

If extenuating circumstances prevented the student from maintaining satisfactory progress, the student must submit a written appeal with appropriate documentation (i.e., **all medical excuses must be accompanied by a doctor's note**) to the Financial Aid Office. The student must file an appeal within one week from the time he/she is notified. **LATE APPEALS WILL NOT BE REVIEWED.**

If the appeal is approved, financial aid will be reinstated. However, if the student fails to maintain satisfactory progress for the ensuing semester, the student will be denied further financial aid. The student cannot appeal this decision.

**NOTE:** The Financial Aid Office encourages the student to continue with his/her educational studies; however, the student is responsible for his/her own tuition. If the student successfully completes all courses attempted, he/she should re-apply for financial aid for the following semester.

The written appeal will be reviewed by a committee made up of members from the college community. The student will receive a written response from the Financial Aid Review Committee indicating whether or not the appeal was approved. To help improve the student's academic standing, the committee has the right to limit the number of credits he/she enrolls for during the semester.

# Veterans' Information

## DAY STUDENTS

All students eligible to receive V.A. benefits must contact the Office of Veterans' Affairs (OVA) upon receiving their acceptance letters. All returning students receiving V.A. benefits must contact the Veterans' Office after registration for the upcoming semester. Registering with the School does not certify an eligible student for V.A. benefits for the upcoming semester. All eligible students must contact the Veterans' Office in person to initiate enrollment certification.

## EVENING STUDENTS

The following are the procedures to be followed by students eligible to receive V.A. benefits:

1. Academic counseling is required before payment of tuition and fees.
2. Student must matriculate.
3. Paid receipt to confirm enrollment must be brought to the Office of Veterans' Affairs to initiate enrollment certification.

**NOTE:** All students receiving V.A. benefits must contact the Office of Veterans' Affairs upon withdrawing from a course or terminating enrollment, changing an address, changing dependent status or changing an academic program.

All students should contact the Financial Aid Office to investigate eligibility for Federal and State grants and scholarships.

## ACADEMIC STANDING

The quality point index is required to maintain acceptable academic standing in an approved program of study in either the Day School or the Division of Continuing Education.

For complete information on academic standing, refer to page ••.

For Continuing Education purposes, the completion of 12 semester hours will be considered the completion of a semester.

Students receiving benefits from the Veterans Administration are advised that if their quality point average does not permit them to remain in a program, they may continue to attend Evening Division courses at their own expense until their average allows them to re-enter the program.

Students are cautioned that the V.A. will not provide benefits to repeat a course which has been previously passed, nor will they support courses which do not meet the requirements for an approved program of study.

Students receiving benefits from the Veterans Administration are advised that benefits will be extended only for the normal length of time that an

approved program is designed to encompass. Full-time students must complete Associate Degree Programs in five semesters. Part-time students will receive reduced benefits for the extended period of time necessary to complete their program of study. Specific questions about benefits, program approval and eligibility will be answered by the Veterans' Office on campus.

### **GRADING PROCEDURE AND UNSATISFACTORY GRADES**

STCC makes use of a scale from "A" to "F" converted into quality points which are utilized information of a cumulative average. A grade of "F" equals 0 quality points and is unsatisfactory. A "D" equals .07 and may count toward a degree if the quality point cumulative average is maintained with respect to degree specifications. (Refer to page on Minimum Prerequisites for Admission.) The Veterans Administration does not authorize benefits for courses which are audited or challenged. **A withdrawal or termination from a course could constitute an overpayment for the veteran.**

### **WITHDRAWAL AND ABSENCES**

All students are required to notify the Registrar of withdrawals or terminations. Students receiving benefits must also contact the Office of Veterans' Affairs. Attendance procedures are at the discretion of the faculty.

Students receiving Veterans Administration benefits will be considered to be making satisfactory progress in each course each semester at the following intervals:

1. If their names appear on the official class list certified by the instructor at the end of the official add/drop period.
2. If they receive a mid-semester grade.
3. If they receive a final grade.

In the event any of 1. through 3. does not occur, the V.A. will be notified within 30 days after the enrollment report or grade report has been issued that said student is not enrolled in the course.

Faculty members may request the Dean of Student Services to withdraw a student for excessive absences.

### **TUITION WAIVERS AND/OR EXEMPTIONS**

For information regarding (1) Massachusetts Vietnam Era Veterans Tuition Waiver, (2) Division of Continuing Education Tuition Exemption Program, or (3) Massachusetts National Guard Tuition Exemption Program, contact the Office of Veterans Affairs.

Individuals expecting to receive one of the above-mentioned waivers/exemptions, must come to the OVA prior to the start of each academic semester.



# Academic Information

## ACADEMIC YEAR

The academic year at Springfield Technical Community College is divided into two semesters with the first semester ending prior to Christmas vacation and the second semester resuming in the latter part of January. The final week of each semester is devoted to final exams. Unless a formal change is published, the calendar in the STCC College Catalog is official.

## ACADEMIC STANDING

### A. *Required Quality Point Average*

The quality point average required to maintain good academic standing is:

1. A minimum of 1.5 cumulative average for students who have attempted 12 or more credits at Springfield Technical Community College, including accepted transfer credits.
2. A minimum of 1.7 cumulative average for students who have attempted 27 or more credits at Springfield Technical Community College, including accepted transfer credits.
3. A minimum of 1.9 cumulative average for students who have attempted 42 or more credits at Springfield Technical Community College, including accepted transfer credits.
4. A minimum of 2.0 cumulative average for students who have attempted 60 or more credits at Springfield Technical Community College, including accepted transfer credits.

**NOTE:** Incomplete, Withdrawal, and Failure grades are counted as courses attempted, but Incompletes and Withdrawals are not factored into the quality point average.

### B. *Probation and Suspension*

Students who do not meet the above requirements will be placed on academic probation. After one semester of probation, a student will be:

1. Suspended unless the cumulative quality point average is raised to that required for good standing (i.e. 1.7 for 27 hours, 1.9 for 42 hours, 2.0 for 60 hours or more hours), or
2. Continued on probation if the semester quality point average is 2.25 or above but the cumulative point average stays below that required to remain in good standing, or
3. Continued on probation if not in attendance, or
4. Removed from probation if the cumulative point average is raised to or above that required to maintain good academic standing.

**Note:** A student may be suspended without having previously been placed on probation if the cumulative average falls below 1.0.

### C. *Satisfactory Progress*

Unless there are special circumstances, students must complete 75% of courses attempted to be considered to be making satisfactory progress toward a degree.



The College also expects students to take a majority of courses in each semester which lead toward a degree in the major in which the student is enrolled. Students receiving financial aid are also subject to specific provisions on satisfactory progress found in the section on Financial Aid.

**D. *Waiver of Provisions of the Academic Standing Policy***

The Dean of Student Services Office administers the Academic Standing policy and questions may be addressed to that office.

An Academic Review Committee is named by the President of the College. The Committee has the authority to:

1. Re-admit students.
2. Waive provisions of the policy on academic standing.
3. Hear student petitions or grievances pertaining to the policy.
4. Give counsel and advice to those who administer the policy and give interpretation and intent clarifications.

Students in the health science programs must maintain a minimum quality point average of 2.0 in their major area of concentration and be accepted by a clinical facility for affiliation. Nursing students must maintain a 2.15 in their major area of concentration. All students in health sciences and nursing must maintain a quality point average of 2.0 in the biological and physical sciences.

The accumulation of credits alone does not necessarily mean that a student is entitled to a degree. A student should refer to his/her specific program curriculum for graduation requirements.

## **GRADUATION REQUIREMENTS**

The Springfield Technical Community College Board of Trustees has statutory authority under the Commonwealth's Board of Regents of Higher Education to confer academic degrees. Candidates for degrees shall have fulfilled the following requirements:

1. Candidates for degrees must meet all departmental graduation requirements. A minimum of 15 credit hours must be earned in residence at the College. Also, the student must have completed at least 20 credits in general education.
2. The student must have earned a minimum cumulative quality point average of 2.0 for all college level courses. Developmental courses are not credited toward graduation requirements.
3. The student must have satisfied all financial obligations to the College, including the payment of the graduation fee, at the beginning of the semester preceding graduation or when 45 credits have been approved for graduation.
4. A National Direct Student Loan recipient must have completed the exit interview with the Financial Aid Officer or his representative.

## **EXAMINATIONS AND GRADES**

Final examinations are scheduled for each course. At the end of each semester, all students receive written letter grades according to the following standards:

Letter Grade	Qualitative Equivalent	Quality Points Earned Per Credit Hour
A	93 - 100	4.0
A-	90 - 92	3.7
B+	87 - 89	3.3
B	83 - 86	3.0
B-	80 - 82	2.7
C+	77 - 79	2.3
C	73 - 76	2.0
C-	70 - 72	1.7
D+	67 - 69	1.3
D	63 - 66	1.0
D-	60 - 62	0.7
F	Below 60	0.0
I	Incomplete	no grade
W	Withdrawn	no grade
Au	Audit	non-credit*

\*Non-graduation-credit courses are not factored into the Quality Point Average.

**The grade of Incomplete (I)** indicates that a major requirement of the course has not been completed. The following policy shall apply to incompletes:

1. An "I" (Incomplete) is a temporary grade assigned to students who fail to complete the requirements of a course. The grade of "I" is to be assigned only to the few students who have valid, approved reasons for their inability to complete the course work on time. An "I" is not to be assigned to a potential failure.
2. An "I" (Incomplete) will change to "F" four weeks after the beginning of the next regular academic semester.
3. This policy shall apply uniformly to the Day Division and the Division of Continuing Education.

## DEVELOPMENTAL COURSES (NON-COLLEGE LEVEL)

Springfield Technical Community College has a number of courses that aid students with deficiencies in specific subject areas. These courses, all with course numbers below 100, are intended to bring the student's skill to a level where the student will be able to accomplish the college-level work. It is the policy of the College that, relative to developmental courses (non-college level), the following shall apply:

1. Academic credit will be awarded for developmental courses but will not count for graduation credit.
2. Developmental courses shall not be calculated into a student's quality point average on a semester basis nor shall such grades be calculated into a student's cumulative quality point average.
3. All registrations for developmental courses shall appear on student transcripts.

## **MAKE-UP EXAMINATIONS**

A student failing to take a semester examination may apply in writing to the appropriate academic division chairperson and the instructor concerned, and, subsequently, the Dean of Academic Affairs, who may give permission to take a make-up examination. If, in their opinion, absence from the regularly scheduled examination was unavoidable, the student may take a make-up examination upon payment of a \$5 fee.

## **CLASS SCHEDULE**

In the majority of cases, with the exception of Directed Study courses, three-credit courses meet three times a week and are of 50 minutes duration, or are 75 minutes long and meet twice a week. Exceptions may be found in career curricula and other special programs. Class hours begin at 8:00 a.m. for classes that meet twice a week, on Tuesday and Thursday, and at 8:30 a.m. for those meeting three times per week, on Monday, Wednesday, and Friday.

## **CLASS ATTENDANCE/GRADING POLICY**

The faculty of the College has voted to allow each instructor to set his/her own classroom attendance policy. Each faculty member will notify his students in writing at the start of each semester of his/her attendance policy, grading policy and course requirements. The Dean of Student Services will, upon request from an instructor, warn students when they are in violation of an instructor's published attendance policy. The Dean of Student Services may, at the recommendation of the instructor, withdraw such a student from that class.

Off-campus activities, appropriately supervised and sponsored by faculty members, which justify a student's absence from scheduled classes, must be approved in advance by the Dean of Student Services. Such activities must be justifiable on grounds consistent with the educational program of the College. Whether a student is excused from class or examination to participate in such activities is determined by the instructor concerned.

## **MID-SEMESTER GRADES**

At mid-semester, students will be graded by each of their professors. These grades will be recorded by the Registrar and forwarded to each student's advisor for dissemination and discussion. These grades will not become part of a student's permanent record but are used to indicate his/her performance through the first half of the semester.

## **REGISTRATION PROCESS**

Returning students must pre-register for the Spring Semester in October, and for the Fall Semester in March of each year, with their faculty advisors. It is the student's responsibility to seek out information concerning departmental course requirements prior to pre-registration. This may be done



with the assistance of the faculty advisor, department chairperson, or the Counseling Center. Returning students are expected to pay their bills and complete the registration process prior to the start of classes.

New students are encouraged to attend an Orientation session held in both August and January prior to the beginning of classes, at which time they are expected to pay their bills and complete registration. A final day of registration is scheduled immediately before classes begin, after which a late registration fee of \$5 will be charged.

Students wishing to change their schedules may do so during the first week of classes. Admittance to a course at this time is, however, dependent upon the seats available.

### **COURSE CHANGES (DROP/ADD)**

Students are permitted to add and drop courses (subject to the approval of faculty advisors) during the first week of classes without penalty. Any changes made thereafter will require the payment of a \$3 fee by the student to the Cashier's Office. *No change will be permitted beyond the second week of classes.*

### **DEPARTMENT/PROGRAM CHANGES**

Students wishing to change their program or department should do so only after considerable thought and counsel. To initiate a program change, students must obtain an Intra-College Transfer application from the Admissions Office.

Consultation with the faculty advisor, an admissions counselor, or the career counselor is recommended to ensure that prerequisites for admission to the new program have been satisfied, before submitting the application to the Admissions Office. The application should be submitted to Admissions no later than December 31 for the following fall term. Applications are reviewed by Admissions, and notifications of decisions mailed to students.

### **COURSE WITHDRAWAL**

A student may withdraw from a course through the sixth week of class without any grade recorded on his transcript; a student may withdraw from a course through the fourteenth week and receive a withdrawal grade on his official transcript. Withdrawal forms require the signatures of the course instructor, the faculty advisor, and the Registrar.

### **REPETITION OF COURSES**

Any student who receives an unsatisfactory grade in a course may repeat that course and both grades will appear on his permanent record. However, only the second grade will be calculated into his quality point average. In order for this policy to be in effect, a student is required to inform the Registrar that he is repeating a course by completing a course repeat form concurrent with the actual repeating of the course(s).



## **AUDITING OF CLASSES**

Students may attend certain classes as auditors (i.e., without receiving credit) under the following conditions:

1. Permission must be obtained from the Instructor and submitted to the Registrar during registration period.
2. All established charges for the course must be paid.
3. Priority in registration will be given to students who are registering in the course for credit.
4. Audit courses will be reflected on student's permanent record as Audit.

## **DEAN'S LIST**

In order to recognize above-average academic performance, a Dean's List is published each semester. Any student carrying 12 or more semester hours who earns a 3.3 quality point average is placed on the Dean's List, providing that student has no grade less than a "C" in that semester.

## **COMMENCEMENT HONORS**

Academic honors are bestowed on those students at Commencement who have distinguished themselves academically at the College. In order to receive honors, a student must have a minimum of 30 semester hours in residency prior to Commencement and have achieved the following cumulative quality point average: *Honors* - 3.3 to 3.69; *High Honors* - 3.7 to 3.89; and *Highest Honors* - 3.9 to 4.0.

## **ALPHA NU OMEGA HONOR SOCIETY**

Springfield Technical Community College is a charter member of the Alpha Nu Omega Society. The purpose of Alpha Nu Omega is to foster academic excellence at the College. Membership is open to any student with a quality point average of 3.5 and who has completed 24 semester hours.

# **Student Information**

## **STUDENTS' RIGHTS AND RESPONSIBILITIES**

This statement of rights and responsibilities is designed to clarify those rights which the student may expect to enjoy as a member of the student body of the College, and the obligations which admission to the College places upon the student.

## GOAL

To provide an atmosphere where sound intellectual and academic development is provided.

## OBJECTIVES

### A. Student Responsibilities

1. To be knowledgeable of and comply with the directives, regulations, and laws as established by the Massachusetts Board of Regents of Higher Education, Springfield Technical Community College Board of Trustees, the College administration and the Student Government Association.
2. To respect the rights of individuals and groups to independent action as long as those rights do not interfere with the parallel rights of others—minorities and majorities alike—including the avoidance of action interfering with those educational processes under the auspices of the College.
3. To be knowledgeable of and comply with the directives, regulations, and laws of duly constituted civil authorities.

### B. Student Rights

1. To have the opportunity to pursue higher education.
2. To have the freedom to exercise the rights of citizenship, association, inquiry, and expression.
3. To have the right of privacy and confidentiality.
4. To have the right of voting representation on all recommendations to the President of the College on matters of concern, including but not limited to, academic standards, student services, and curriculum changes.
5. To have the right of quality education, including but not limited to:
  - a. The right to competent instruction in courses and programs offered by the College.
  - b. The right to assistance in overcoming educational, cultural, emotional and economic disadvantages which hinder the educational process.
  - c. The right to receive in writing from each faculty member during the first week of classes, of every semester, a brief, written course description and outline of the material to be covered, course requirements including a specific list of information and techniques which the student is expected to acquire, attendance policy, and the grading system to be utilized.
6. To have the right to fair and equal treatment, including but not limited to instruction, evaluation, and services by faculty, staff, students, and administrators.
7. To have the right to procedural due process in grievance and disciplinary hearings.

Approved by the Springfield Technical Community College Board of Trustees, May 29, 1984.

## SPRINGFIELD TECHNICAL COMMUNITY COLLEGE STUDENT GRIEVANCE PROCEDURE

If a student has a grievance relating to college policy, procedure, personnel, or student rights, the student may follow this grievance procedure. If assistance is needed with the process, the student may contact the Dean of Student Services' Office, and help will be provided.

### *I. Definitions*

A "grievance" shall mean a complaint which has been filed by a grievant dealing specifically with an allegation concerning any form of discrimination or abrogation of student rights.

A "grievant" shall mean a student or group of students at the College.

A "student" shall mean an individual(s) enrolled at the College at the time of the alleged grievance.

### *II. Purpose*

The primary purpose of this procedure is to secure prompt and equitable resolution of a grievance. Customary channels of communication shall be used wherever feasible, in seeking clarification of questions of concern, before the grievance procedure is utilized. Every effort shall be made to maintain confidentiality at each level of this procedure.

### *III. Time*

The number of days indicated at each level shall be considered as a maximum. Every effort should be made to expedite the process. However, the time limits specified may be extended by mutual agreement. At times when the College is not in regular session, deadlines may be automatically extended.

### *IV. Procedure*

#### *Level One*

*Step One* - The grievant shall first present the grievance orally and informally to the person against whom a grievance exists. This should be done in a reasonable period of time, within thirty (30) calendar days from the date of grievance action or from the date that the grievant knew of the grievable act.

*Step Two* - If the grievance is not resolved within five (5) working days, the grievant may present in writing within ten (10) working days the allegations supporting the grievance, including all of the known facts to the person against whom the grievance is directed.\* The person against whom the grievance is directed must respond, in writing, within five (5) working days to the grievant.

*Step Three* - If the grievance is not resolved within the said five (5) working days, the grievant may present it in writing within ten (10) working days to the appropriate supervisor.\* The supervisor must respond in writing within (5) working days, with the decision to the grievant.\*

*Step Four* - If the grievance is not resolved within the said five (5) working days, the grievant may present the complaint in writing within ten (10) working days to the chairperson of the College Student Grievance Committee. The complaint must include all the supporting statements and evidence. The Chairperson shall convene a Committee. Within fifteen (15) working



days after receiving the written grievance, the Committee shall state its decision in writing with all supporting reasons and evidence to the grievant and the person against whom the grievance is directed.\*

\*With a copy to designee of the President (normally the Dean of Student Services.)

#### *Level Two*

Within five (5) working days after receiving the decision from Level One-Step Four, the grievant may appeal the decision to the President of the College. This appeal shall be in writing and shall be accompanied by the original complaint and copies of all previous supporting statements, evidence and decisions. The President shall evaluate the evidence and make a decision, in writing, within ten (10) working days after receiving the appeal. The decision of the President is final.

#### *V. Withdrawal*

A grievance may be withdrawn by the grievant at any level without prejudice or record.

#### *VI. Hearings and Decisions*

At each of the above levels, the grievant and the person against whom the grievance is directed shall be given the opportunity to be present, and to examine and cross-examine witnesses. Each party may bring an advocate to the meeting. If the advocate is a member of the Bar, the other party must be notified at least three (3) days in advance. All decisions at each level shall be in writing, with the exception of Level One -Step One, and shall include supporting reasons. Copies of all decisions and recommendations shall be given to both parties. The College Student Grievance Committee and President's Hearing shall not be open to the public and shall be conducted in a manner to ensure a fair hearing. The Hearing Committee and the President shall set the hearing guidelines.

#### *VII. Reprisals*

No reprisals of any kind shall be taken against any participant in the grievance procedure.

#### *VIII. Preservation of Records*

After the final decision has been made, all supporting data shall be preserved for a period of three (3) years. During this period, the grievant and/or the person against whom the grievance was directed may request in writing that the data be included in or excluded from the official college record.

#### *IX. Disclaimer*

In the adoption and implementation of this grievance procedure, it shall be understood that at no level is this a court of law and that rules of evidence shall not apply.

#### *X. Membership of the College Student Grievance Committee*

The composition of the College Student Grievance Committee shall consist of a permanent non-voting Chairperson and seven (7) members:

Classified	1
Administration	1
Professional Unit	2
Students	2



The seventh member shall be from the same identifiable group as the person against whom the grievance has been filed. No member who has a personal interest in the particular grievance shall be eligible to serve on the Grievance Committee. The Grievance Committee pool shall annually select a Chairperson who shall serve for one (1) year.

*XI. Selection of the College Student Grievance Committee*

The selection of the College Student Grievance Committee shall be made from candidates assigned to the Student Grievance Committee Pool. This pool shall consist of:

Classified	5
Administration	5
Professional Unit	10
Students	10

Assignment to the College Student Grievance Committee Pool shall be determined by selection by the proper representatives.

*XII. Type of Hearing*

The hearing shall be a closed meeting. Hearings commence at Level One - Step four.

*XIII. Other*

A. Filing a grievance in accordance with the procedure set forth above in no way abrogates the student's right to file complaints with the appropriate state and federal agencies or with the courts. However, the grievant's initiation of proceedings in any other forum waives the right to utilize the grievance procedure outlined above.

B. No provision of this process shall operate to restrict the right of the other party to follow the same procedure of appeal as outlined above.

C. All written responses shall be delivered in hand to the appropriate person or be sent by certified mail to the address contained in official College records.

*XVI. Right of Appeal by Person Being Grieved*

Should the findings be for the grievant at Level One - Step III or Step IV, the person or persons being grieved should have the right of appeal to the next level following the same procedures and time schedules set up for appeals by a grievant.

Approved by the Board of Trustees of Springfield Technical Community College, June 24, 1981.

**STUDENT CODE OF CONDUCT**

The College assumes that its students will behave in such a way that will reflect creditably upon their homes, family, College and community. To help provide an orderly atmosphere to nurture student development, certain regulations and policies have been developed over the years. The College further assumes that all students will abide by these regulations and policies. Violations of established College policy may result in disciplinary action up to and including suspension from the College.

The following is not an all-inclusive list of prohibited actions, but will serve as a guideline.

1. Academic dishonesty - such as plagiarism, cheating, use of unauthorized books or notes, knowingly furnishing false information, unauthorized reading, removing, duplicating, photographing, misuse of any college file, document, or record of any faculty, administrator, staff or student.
2. Alteration of college records, documents, or identification instruments or the use of the same with the intent to defraud.
3. The possession or use of narcotics and dangerous drugs as defined by the laws of the Commonwealth of Massachusetts is prohibited on campus and at all college-sponsored off-campus activities. The use or possession of alcoholic beverages is restricted by the Massachusetts Board of Regional Community Colleges to special social events.
4. Intentional obstruction or disruption of normal college conduct, functions, processes, routines, college activities on or off campus, or activities of those invited to the campus for any purpose.
5. Physical abuse or misuse of persons or property on campus or at college-approved off-campus activities.
6. Theft, or unauthorized use or possession of any property (including keys, files, documents, library materials, etc.) owned, leased, or maintained by the College or by persons on the campus.
7. Weapons, firearms, explosives - possession, sale, or use of any weapon, firearm, explosive, or explosive device including fireworks.
8. Failure to comply with directions of college faculty, staff and administration acting in the performance of their duties.
9. Violations of published college regulations including parking, motor vehicle movement, use of college buildings or equipment and any other regulations which may from time to time be enacted.

## **POLICY OF CONFIDENTIALITY OF STUDENT RECORDS**

The Family Educational Rights and Privacy Acts 1974, as amended, provides for students to have access to their educational records, to challenge anything in the records which they consider inaccurate or misleading, and to limit the release of such information.

In compliance with the law, the College has established a policy to protect students from misuse of information. The policy is summarized as follows:

1. Directory Information will include (1) name, (2) address, (3) confirmation of date of graduation and certificate/degree received. Students may withhold their Directory Information by notifying the Dean of Student Services in writing.
2. Authorized personnel may have limited access to student records for (1) internal educational purposes, (2) routine administrative and statistical purposes, or (3) legitimate inquiries made to review a student's background information in order to adequately instruct and advise the student in a specific academic area.
3. A record log or audit trail will be kept for all students showing the student's records. No record of access need be kept if the obtained information is considered directory information, is required for normal clerical maintenance of a file, or is seen by authorized personnel in the normal performance of their responsibilities.

4. No records will be released to anyone without the formal written consent of the student concerned. A student will be notified whenever a court subpoena the records.
5. Students may have general access to their records and the right to challenge records they believe to be inaccurate, incomplete, or misleading, or otherwise in violation of their privacy.

### **OFF-CAMPUS RESIDENCE**

Springfield Technical Community College realizes that it offers a wide variety of programs not available at other colleges or institutions which attract many students who are not within commuting distance.

Housing accommodations are available in close proximity to the College, and include the YMCA, apartments, and rooms in private homes. The College, however, assumes no responsibility for students living off campus, but will provide assistance in locating housing.

### **SPECIAL STUDENT SERVICES PROGRAM**

The College has specialists to service:

1. Handicapped students
2. Veterans
3. Limited English-speaking students
4. Black and Hispanic Americans
5. Students in need of financial counseling or assistance
6. Students in need of career counseling
7. Students in need of special tutoring.

An important feature of our program is to provide individual academic and vocational counseling through the faculty advisors and appropriate specialists. Students who, for whatever reason, suffer a linguistic and/or learning handicap will be given special tutorial assistance and counseling. Referral to any of the student service specialists may be made through the faculty advisor or the Dean of Student Services office.

The student's need for and interest in self-identity and community awareness is an acknowledged fact. The College works closely with students and community representatives to incorporate into our program special classes and cultural activities to satisfy this need. Through special funding, the College has implemented a program of courses and events to develop an awareness of cultural heritage among Hispanic and other ethnic groups of the community.

### **English As a Second Language Program**

The English As a Second Language Program has been designed to help students develop language skills for successful performance in a regular program at STCC.

Students are given the University of Michigan placement test and placed in the appropriate level according to the test score.

The program offers three different levels of English As a Second Language courses. Each level has three courses, for a total of thirteen hours of direct instruction per week.



The program also provides tutors for students who need additional support to enhance their understanding of English grammar concepts and to help them improve their language skills.

The English As a Second Language Program is offered through Core 6 of the General Studies Program. Please see page 104 for further information.

### **Tutorial Assistance Program**

The Tutorial Assistance Program is an important component of Springfield Technical Community College. Through the services of this program, students in need of tutorial assistance receive tutoring in any academic field. The Tutorial Assistance Program Coordinator is located on the first floor of Building 15, in the Student Services Center.

### **COUNSELING SERVICES**

The Counseling Center assists students regarding educational, career, or personal concerns. The Center is staffed by professional counselors whose primary function is to help students make good decisions when they are experiencing uncertainties or difficulties, or are planning their future. The areas of counseling available are listed below:

#### ***Career Counseling***

*Career Counseling* helps students make sensible career choices. Individual appointments are available to help students through the decision-making process in which they set priorities and plan and implement both short and long-range career goals.

*Career Testing* is available to help students match values, skills, interests and needs with possible career choices.

*Career Resources* - The Center maintains an excellent collection of catalogs, directories, pamphlets and other career resources which students are welcome to use. The STCC Library also has an extensive career collection, including microfiche copies of recent college catalogs from across the country.

*Career Planning Course* - Life Directions: Career Planning for the 80's and Beyond (ND 120) is a 3 credit course designed to assist students in career and life planning. Interest and personality assessment, skills identification, values clarification, career exploration, and career decision-making are major topics.

*Transfer Counseling: Please see Transfer Information, page 43.*

#### ***Academic Advisement***

*Academic Advisement* is offered to students or prospective students to assist them in making appropriate program and course choices. Program sheets outlining STCC degree requirements are available in the Counseling Center.

#### ***Personal Counseling:***

*Personal Counseling:* Counselors are available to assist students in resolving personal concerns. Supportive, behavioral, and other types of counseling are provided on a strictly confidential basis. Major emphasis is on helping essentially normal people resolve personal and interpersonal problems. Should a student require services not offered by the Counseling Center, referral to the appropriate community resource is made.



### *Special Interest Groups*

**Support Services** - A Rehabilitation Counselor is available to work with students who have a physical and/or emotional disability. This counselor will assist the student in clarifying his/her academic and personal needs. Coordination of services within the College and within the community will provide the student with counseling, tutoring, financial aid, appropriate equipment, etc.

The counselor will act as a resource person concerning specific or general issues related to disabilities and modifications in teaching and learning methods. Faculty are encouraged to contact the Counseling Center whenever supportive services are indicated.

**Learning Disabilities** - If a student is experiencing extreme difficulty reading, comprehending, or processing information, a learning disability may exist. An informal assessment by the Counseling Center can be arranged. Referral for further evaluation will be provided, whenever it is indicated. Ideas for modifying teaching and learning methods are also available.

### **RETURNING ADULT WOMEN'S CENTER**

The Returning Adult Women's Center at STCC is designed to serve the increasing number of women returning to college after several years as a homemaker or in the workforce. The Center provides academic and personal support, and a community and campus referral network as well as a gathering place for women students to share experience, concerns, and information. The Center is located in Building 20, Room 100, adjacent to the student lounge, and is administered by the Office of Student Services. The telephone number is 781-7822, extension 3723.

### **ARMORY SQUARE DAY CARE**

Armory Square Day Care, Inc. is a private, non-profit day care center operating on the campus of STCC. The center opened in the fall of 1984, to serve the children of students, faculty, and staff at STCC. Located in Building 20, the center cared for 24 children aged 2 years 9 months to 5 years, during the 1984-85 academic year. The center plans to move to Building 11 with an expanded program to include infants and toddlers.

The Armory Square Day Care program is based on the belief that young children learn through play. The center provides a variety of experiences designed to build the child's self-esteem and develop social skills. The telephone number is 737-3455, or 781-7822 extension 3726.

### **THE LIBRARY**

STCC's library is located in Building 27 (along Federal St.), directly across the lobby from the college bookstore. During the regular fall and spring semesters, it is open from 8 a.m. to 9 p.m. Monday through Thursday, and 8 a.m. to 5 p.m. on Friday. The library is closed on weekends and legal holidays; summer and vacation hours may vary. All students enrolled part or full time in both day and evening divisions are entitled to use the library's resources and services.

#### *Print Materials:*

The library's print collection contains over 47,000 books, 360 journals, 12,000 pamphlets and documents, newspapers from surrounding major metropolitan areas, catalogs of colleges throughout the U.S., current fiction and

non-fiction paperbacks, and children/young adult books. The selection of journals includes a number of popular magazines in addition to a wide variety of specialized publications covering all fields in the STCC curricula. Magazines and reference books - including encyclopedias, atlases, almanacs, catalogs, indexes, and directories — must be used in the library. All other books and pamphlets may be charged out.

#### *Career Center:*

Situated across from the reference desk, the library's Career Center offers materials on a wide variety of occupations. Brochures, industry profiles, career handbooks, resume/cover letter guides, and job hunting manuals comprise the bulk of this collection — much of which is available for loan.

#### *Non-Print Materials:*

The library maintains a large collection of non-print materials, including 16mm films, videocassettes, audiocassettes, filmstrips, slides, records, transparencies and film loops. Fully-equipped rooms for individual and group viewing of programs are located to the right of the circulation area. Staff from the AV Department are available to assist students with the projectors/viewers. Audiocassettes and records may be charged out just like books.

#### *Circulation:*

All library materials are charged out and returned at the circulation desk. Items placed on "Room Reserve" by faculty are located here as well. A valid student ID card is necessary in order to sign out materials.

For convenience, there is a book drop outside Garvey Hall where materials may be returned when the library is closed.

#### *Reference:*

For anyone having difficulty locating books or information for class-related or personal use, a reference librarian is always on duty. He/she will assist students in finding information and show them how to use the wealth of resources available in the library.

#### *Cooperative Borrowing:*

CLGS (Cooperating Libraries of Greater Springfield) — Through an agreement among the colleges in the Greater Springfield area, any STCC student may use the other college libraries by presenting a valid STCC ID. The participating institutions are: American International College, Bay Path Junior College, Elms College, Holyoke Community College, Springfield College, Western New England College and Law School, and Westfield State College. Springfield City Library and Baystate Medical Center Library are also included in the group. As a result of CLGS, many additional resources are available. When using other area libraries, students are subject to their policies and regulations concerning loan periods and possible penalties for overdue materials.

C/W MARS (Central/Western Massachusetts Automated Resource Sharing) — STCC has recently joined C/W MARS, a computer network of 28 academic, public and special libraries, which will bring its members automated circulation and interlibrary loan systems. As a result of the library's participation in this network, the STCC community will have access to over 4 million books and other library materials previously unavailable to the college community.

Other — Students may use the resources of all Massachusetts public college and university libraries by presenting a valid STCC ID. If a student needs a book which is unavailable in the Greater Springfield area or at the University of Massachusetts, the book can be borrowed by mail through interlibrary loan. All requests for ILL are handled at the reference desk.

*Miscellaneous:*

Within the library are other facilities which students may wish to use. These include a copy machine which costs \$.10 per page, and a microfiche copier which also costs \$.10 per page.

A student library guide with complete details on materials and services is available to all students at the circulation and reference desk.

## **ACADEMIC COMPUTING SERVICES**

STCC is pleased to provide its students with exceptional academic computing services. This provision is in recognition of the varied uses for which computers are used today. Our resources consist of Prime and Wang mini-computers as well as IBM and Apple microcomputers, making up a total of approximately 150 work stations. Staff is available in the computer labs to support students in their use of the College's computers for programming assignments, electronic spreadsheets, word processing, data bases, and Computer Assisted Instruction. As the use of computers grows, we are making every effort to meet the needs of our student body.

## **PLACEMENT OFFICE**

The Placement Office is located in Bldg. 16, Room 251, second floor. It provides a centralized service for the purpose of:

Assisting all students in the process of choosing, changing, or confirming career goals by providing counseling and informational services in conjunction with academic advisors and the Counseling Center;

Providing on-campus recruiting interviews, listing and publicizing job opportunities, and other types of post-college related activities, to assist seniors as well as alumni in securing employment which best utilizes their education, training, experience and abilities;

Assisting students in obtaining summer employment.

## **ATHLETICS**

Inter-Collegiate Athletics are an integral and prominent part of STCC's educational objectives. Sports are seen as vital and beneficial activities. STCC is a member in good standing of the NJCAA and MCCAC.

There are currently six inter-collegiate or club sport teams at STCC, including Men's soccer, basketball, and baseball along with Women's basketball, and softball. There is also a Spring golf team that is co-educational.

Intra-mural and recreational activities are geared to the desires of the student population. In the past, intra-mural and recreational activities have included flag football, basketball, bowling, softball, floor hockey, and volleyball.



The intra-mural and recreational desires of the student body are assessed on a periodic basis so that these programs can change offerings as interests change.

## **STUDENT ACTIVITIES**

The Student Activities Program is designed to complement the instructional programs by providing a variety of meaningful educational, cultural and social experiences. The Student Activities Center assists students and faculty in the planning of co-curricular programs in the development of student organizations. The staff of the Student Activities Center, with student leaders, provides support to special planning groups and interested students in the promotion of activities on campus. The activities and organizations are open to interested students, faculty and staff.

The Student Government Association is a forum for student viewpoints and needs, which are brought to the attention of the College administration through the Student Senate. All students are members of the Student Government Association and are represented by the Student Senate, which meets regularly during the school year, and is elected annually by the student body.

Social, professional and other student organizations are considered an integral part of the College's total educational program. Students with common interests may form recognized student organizations.

Specific information on Student Activities can be found in the STCC Student Handbook.

## **COLLEGE BOOKSTORE**

The college bookstore, located on the first floor of Building 27, is open every school day from 8:00 a.m. to 3:30 p.m. It is also open evenings for the convenience of Continuing Education students. Books, school supplies, equipment for course work, as well as miscellaneous items are offered for sale, and used books are offered at discount prices. In addition, students can purchase their class rings, and arrange for magazine subscriptions at discount prices.

## **AWARDS**

At the Honors Convocation held prior to Commencement, Outstanding Academic Achievement awards are given to graduating seniors who have achieved a 4.0 Quality Point Average. Other awards and scholarships are given to those students whose academic records in their departments are outstanding, and to those who have contributed significantly to the total College community through their co-curricular participation. Besides awards by the academic departments and divisions, College-wide awards include:

- \* Alumni Association Scholarship Awards
- \* Athletic Excellence Awards
- \* Board of Regents Scholarships



- \* Edmond P. Garvey Award
- \* Joseph J. Cooligan Award
- \* Lucille Goodson Parks Award
- \* Michael W. Scibelli Scholarship Award
- \* Minority Talent Roster for Outstanding Minority Community College Graduates
- \* STCC Scholarships
- \* Teresina B. Thompson Award
- \* Who's Who Among Students in American Junior Colleges

## **PARKING**

Each year the College attempts to secure a maximum number of parking spaces in the general area of the campus for student parking and in September the College publishes an updated list of independent parking areas located in the general vicinity of the campus. It should be noted that these lots are not controlled by the College and any arrangements in regard to cost will have to be worked out between the student and the owner of the lot.

## **INSURANCE**

The Commonwealth of Massachusetts requires each student to purchase through the College an accident insurance policy for a minimum charge. Optional plans under this policy may be purchased to provide hospitalization and twenty-four hour protection. Information about insurance will be sent to each admitted student. Careful consideration should be given to the additional coverage available. The cost is quite reasonable for the amount of coverage under the "optional" plan.

## **MEDICAL AND EMERGENCY HEALTH SERVICE**

Every student while on campus may seek the counsel and professional advice of the college nurse who has an office on the first floor of Building 16, Room 105. The nurse is on duty every school day from 8 a.m. until 4 p.m. Her extension is 3510. Wesson Memorial Hospital is located one block from the STCC campus. In case of any emergency, the number to call is 787-2562, Wesson Emergency. A physician is available either on a walk-in basis or by appointment, on Monday, Tuesday, Thursday, and Friday from 11:15 a.m. to 12:15 p.m.

# **Transfer Information**

## **TRANSFER COUNSELING**

Students intending to transfer to four-year colleges need to plan early in order to take courses or programs paralleling requirements at the college they hope to attend. Assistance, in the form of individual advisement is

available from the Transfer Counselor in the Admissions Office. Catalogs, applications, and other resources are available in the Counseling Center. Prospective transfer students should also review the Commonwealth Transfer Compact information below.

### **COMMONWEALTH TRANSFER COMPACT**

Students planning to transfer to a four-year college or university, particularly a public one, in Massachusetts may find the Commonwealth Transfer Compact most helpful in receiving the maximum award of transfer credit toward a baccalaureate degree.

The Massachusetts Board of Regional Community Colleges endorsed the Commonwealth Transfer Compact, in May, 1974, to facilitate student mobility in Massachusetts public higher education. A number of private colleges in Massachusetts generally adhere to its provisions.

The Compact guarantees that a student who holds an A. A. or A. S. degree from a Massachusetts community college, and who subsequently transfers to a four-year public institution in Massachusetts, will be awarded at least 60 semester hours of work toward a baccalaureate degree.

An associate degree which is transferable as a unit (contingent upon acceptance for admission) under this policy must include the following courses:

- a.) 6 hours of English/communications
- b.) 9 hours of behavioral/social sciences
- c.) 9 hours of humanities/fine arts
- d.) 9 hours of mathematics/sciences
- e.) the remaining credits to be on a college level.

These courses may be found in this catalog by referring to the Index of Course Subjects under the following prefixes:

#### **English/Communications**

LE - English

#### **Behavioral/Social Sciences**

NE - Economics

NH - History\*

NI - Political Science

NP - Psychology

NS - Sociology/Anthropology

#### **Humanities/Fine Arts**

LA - Art

LE - Literature

LF - Foreign Languages

LM - Music

LX - Philosophy

### **Mathematics/Sciences**

MB - Biological Sciences

MC - Chemistry

MM - Mathematics

MP - Physics

\*Some colleges (e.g. UMass) consider history as a humanities course.

## **Division Of Continuing Education**

Through the Division of Continuing Education, the College meets a wide variety of community educational and training needs. Programs of both a credit and non-credit nature are offered on a year-round basis with the Fall and Spring semester dates closely paralleling those of the Day School.

The Division of Continuing Education operates on a self-sustaining basis, according to the General Laws of the Commonwealth, designed to meet the needs of the community for higher education. The Division of Continuing Education provides:

1. Credit and non-credit courses in both general and specialized educational fields;
2. The opportunity to earn an associate degree in a wide range of programs;
3. Access to College courses at numerous extension centers for students who may not have convenient access to the Springfield campus;
4. Seminars, conferences, and on-site employee training programs for business, industry, and professional groups.

Offerings are designed to furnish opportunities to: (1) resident students of Springfield Technical Community College to supplement the work of the day division college year by additional elective courses; (2) students of other colleges and universities to take courses for credit, transferable to their resident college; (3) high school students who wish to remove academic deficiencies before entering college in September; and (4) regional adult students who wish to update career skills, pursue a new career, or gain experience in a subject of specialized interest.

### **CENTER FOR BUSINESS/INDUSTRY DEVELOPMENT**

The Center for Business/Industry Development channels the resources of STCC's faculty and staff to design, conduct, and evaluate cost-effective training programs in a wide variety of content areas for employees of business and industry in Western Massachusetts.

# Academic Programs

In an attempt to provide the most comprehensive variety of educational experiences and match these with the specific needs of the individual student, the College offers many academic programs. In the main, these fall into four categories: College transfer programs, career programs, developmental education program, general education curriculum, and cooperative education program.

## TRANSFER PROGRAMS

The transfer curricula are designed for students who plan to transfer to a senior college or university after completion of one or two years at STCC. The courses offered in these curricula are generally those required to provide a broad educational background before beginning specialization in a major field of study. A high quality of academic achievement, revealing seriousness of purpose and of sound habits of study, is the most important qualification for successful transfer.

Three transfer programs are offered at Springfield Technical Community College:

1. Business Administration
2. Engineering and Sciences
3. Liberal Arts and Sciences

Many students attending the College consider, at some point in their career, transferring to a four-year institution. There are numerous specific programs at STCC that are designed with that purpose in mind. Students enrolled in these programs should be in early and constant contact with a transfer counselor so that their course progress toward transferring to a four-year institution is expedited.

## CAREER PROGRAMS

STCC offers a variety of Career programs that are designed primarily for the individual seeking two years of higher education and immediate job opportunities upon graduation. Such Career Programs are available in the Engineering Technologies, Business Administration, Health/Human Services, and Social Sciences. Each of the Career Programs offers a two-fold objective. The student receives a general education background to provide him/her with a better understanding of the community around him and a technical preparation designed around a specific occupation.

Career students who plan to continue their education beyond the two-year level are advised to consult with their College counselor early in the program.

## DEVELOPMENTAL EDUCATION PROGRAM

The College offers developmental courses in math, science, English, and reading for students with deficiencies in these areas. Students enrolled in these courses can expect support in the form of tutoring, progress evaluation, advising, and counseling as needed, with special attention toward fulfillment of students' academic career goals.



The General Studies/Developmental Education program identifies and provides students with this specialized direction. The program guides students in "cores" of study based upon their selected fields of interest. Faculty advisors are assigned to the students from the academic departments into which each student aspires to matriculate.

The Individualized Learning Center (ILC) located in Building 17, Room 425, is the test/tutorial area for Developmental and Pre-Calculus Mathematics. Through the use of audio tapes and programmed textbooks, students progress at their own rate and ability. Students are assigned to classes with a mathematics professor and also receive help from student tutors assigned to the ILC. Students enrolled in these courses may use the facilities during their assigned class periods and any other hours the ILC is open.

The Developmental English Listening Center, located in Building 13, provides developmental reading courses and special assistance for students for whom English is not the native language. Self-paced auto-instructional courses similar to those used in Developmental Mathematics are currently being prepared to enhance instruction in basic communications skills.

## **GENERAL EDUCATION CURRICULUM**

Students enrolled in a degree program are required to take a minimum of 20 credits in General Education. The configuration of courses is distributed among the Math and Natural Sciences, the Humanities, and the Social/Behavioral Sciences.

The purpose of General Education courses is to develop in students the capacity for critical thinking; the ability to communicate effectively; an appreciation for the arts and humanities; and an understanding of the historic basis of our modern, technological society. General Education also aims to assist in the development of people who are educated in mind, responsive to civic and social obligations, capable of adjusting to change, and learners for life.

Consult the individual departmental Course of Study for the specific distribution of general education courses required by each program.

## **COOPERATIVE EDUCATION PROGRAM**

The Cooperative Education Program allows students in the third semester of their degree program to enter the business world and participate in paid employment that is directly related to their major field of study. The program involves the merging of industry with education in order to better prepare students for meaningful employment as well as for satisfying roles in society.

In order to participate in Cooperative Education, a 2.5 quality point average must be maintained by the student. Most students participate in Cooperative Education during their third semester in an established major; however, it is possible to participate in the program prior to that point. Students are first accepted into the program by the Director of Cooperative Education and then must be approved by the appropriate faculty coordinator.

Once a student is accepted into the program, the Office of Cooperative Education, faculty coordinator, and the student all work together in securing a qualified cooperative education position. A learning contract is then developed between the student and his/her faculty coordinator. The contract outlines specific objectives and goals in addition to any other requirements for completion of the Cooperative Education assignment and grading.

The faculty coordinator meets routinely with the student, reviews his/her work and assigns a letter grade at the end of the semester. Students may register for a 3-, 6-, or 9-credit Cooperative Education experience. Programs currently using the Cooperative Education option are:

- ADVANCED METALS MACHINING TECHNOLOGY
- AUTOMOTIVE TECHNOLOGY
- BIO-MEDICAL INSTRUMENTATION TECHNOLOGY
- BUSINESS ADMINISTRATION
- CIVIL ENGINEERING TECHNOLOGY
- COMPUTER INFORMATION SYSTEM/DATA PROCESSING
- COMPUTER MAINTENANCE TECHNOLOGY
- EARLY CHILDHOOD EDUCATION
- ELECTRICAL TECHNOLOGY
- ELECTRONIC TECHNOLOGY/MICROPROCESSING TECHNOLOGY
- ENVIRONMENTAL TECHNOLOGY
- GENERAL STUDIES
- GRAPHIC ARTS TECHNOLOGY
- HEAT/POWER/AIR CONDITIONING TECHNOLOGY
- INSTRUMENTATION TECHNOLOGY
- LANDSCAPE/PLANT SCIENCE TECHNOLOGY
- LASER ELECTRO-OPTICS TECHNOLOGY
- LAW ENFORCEMENT/CRIMINAL JUSTICE
- MACHINE DESIGN/DRAFTING AND DESIGN
- OFFICE SYSTEMS/SECRETARIAL SCIENCES
- TELECOMMUNICATIONS TECHNOLOGY

For further information, students should contact the Office of Cooperative Education located in Garvey Hall (Building 16) Room 297.

# Curricula of the College

## **HEALTH/HUMAN SERVICES**

Cosmetology\*  
Dental Assistant\*  
Dental Hygiene  
Human Services Associate  
    Options: Generalist  
            Gerontology  
Medical Assistant  
Medical Laboratory Technician  
Nuclear Medicine Technology  
    Option: Advanced Standing  
Nursing  
Physical Therapist Assistant  
Radiation Therapy Technology  
    Option: Advanced Standing  
Radiologic Technology  
Respiratory Therapy  
Surgical Technology

## **BUSINESS ADMINISTRATION/COMPUTER INFORMATION SYSTEMS:**

### **DATA PROCESSING/OFFICE SYSTEMS: SECRETARIAL SCIENCES**

#### **BUSINESS ADMINISTRATION**

Accounting  
Finance  
General Business  
    Option: Transfer Compact  
Management  
    Option: Small Business Management  
Marketing

#### **COMPUTER INFORMATION SYSTEMS/DATA PROCESSING**

#### **OFFICE SYSTEMS/SECRETARIAL SCIENCES**

Clerical Office Assistant\*  
Executive Office Administration/Executive Secretarial  
    Options: Word Processing  
            Bilingual Word Processing  
Legal Office Administration/Legal Secretarial  
    Option: Word Processing  
Medical Office Administration/Medical Secretarial  
Word Processing Management

## **LIBERAL ARTS AND SCIENCES**

Early Childhood Education  
General Studies  
Law Enforcement/Criminal Justice  
Liberal Arts Transfer  
    Option: Fine Arts

\*One-year certificate programs

## **ENGINEERING TECHNOLOGIES**

Advanced Metals Machining Technology  
Automotive Technology  
Bio-Medical Instrumentation Technology  
Civil Engineering Technology  
Computer Maintenance Technology  
Drafting and Design Technology\*  
Electrical Technology  
Electronic Technology  
    Option: Microprocessing Technology  
Environmental Technology  
Graphic Arts Technology  
Heat/Power/Air Conditioning Technology  
    Option: Solar Energy  
Instrumentation Technology  
Landscape/Plant Science Technology  
Laser Electro-Optics Technology  
Machine Design Technology  
Telecommunications Technology

## **ENGINEERING & SCIENCE TRANSFER**

Engineering Transfer

    Chemical  
    Civil  
    Electrical  
    Environmental  
    Industrial  
    Mechanical  
    Technology Core

Computer Science Transfer

Science Transfer

    Biology  
    Chemistry  
    Mathematics  
    Physics  
    Pre-Dental  
    Pre-Engineering  
    Pre-Medical  
    Pre-Veterinary  
    Pre-Pharmacy

\*One-year certificate programs



## Health/Human Services



## Health - Human Services/Nursing

Clinical rotations are an integral part of all Health/Human Services/Nursing program curricula. The clinical component is based upon contracts negotiated with area health care facilities, physicians, dentists and educational facilities.

*Final acceptance into the Health/Human Services/Nursing Program is conditioned upon the submission of all health forms to the College Health Service and review and acceptance of students by both the Dean of Allied Health and the Affiliation Agency Representative.*

Students enrolled in Health/Human Services/Nursing, in addition to meeting the general requirements of the College must:

1. Meet the terms of the clinical affiliation agreement with the cooperating agencies.
2. Meet the specific academic requirements of their program of study.

The terms of the affiliation agreements require each student to:

1. Submit a pre-entrance physical examination completed by a physician to the College Health Service for review by the Affiliating Agency and the College.

**ALL REQUIRED LABORATORY WORK, IMMUNIZATIONS, AND CHEST X-RAYS MUST BE COMPLETED PRIOR TO SCHEDULED AFFILIATIONS.**

The Affiliating Agency reserves the right to refuse to accept a student for placement who does not meet the Agency standards or who has not been immunized.

2. Carry a malpractice liability insurance policy - The College will arrange for this insurance coverage. The premium is to be paid by the insured student. Limits of coverage are to be determined by the College. At the present time, cost to the student is about \$15.00 per year.
3. The College requires that all students in health/human services and nursing must wear the college student uniform and meet the requirements of the *Professional Dress Code* when on affiliation in clinical laboratory settings and at other times as designated by the respective departments.
4. Abide by the rules and regulations of the cooperating agencies.
5. Assume the cost of transportation to the clinical agencies and other related expenses such as meals etc.
6. Fulfill the academic requirements of the department enrolled in as well as those of the College.

The specific academic requirements of the health/human service departments and nursing division are set forth on the specific page dedicated to the program within this publication.

The College reserves the right to withdraw any student at any time from his/her program in health/human services or nursing who cannot be placed in a cooperating agency because of failure of the student to meet or comply with the terms of the affiliation agreement.

Many of the health profession's accrediting agencies have specific requirements both in theory and practice which must be met by the program of study in order to be accredited. Therefore, some curricula, in order to meet the hour requirements of their fields, have intersession and/or summer sessions in addition to the regular college semester. Students will *be charged for intersession and/or summer sessions at the regular Division of Continuing Education rate*. This is in addition to the regular college tuition which covers the semester course of study.

The clinical laboratories are scheduled according to available agency time and the needs of the program. Therefore, students may be scheduled on evenings by arrangement. You will be given notice in advance of such scheduling.

## Cosmetology

The science of Cosmetology has shown rapid technological changes in recent years. One of the attractive features of cosmetology as a career is the relatively brief time it takes to become a licensed cosmetologist. Numerous job opportunities exist for graduates in the beauty field.

To be eligible to take cosmetology, a student must be a high school graduate, sixteen (16) years of age or older, with a satisfactory medical report. The student must have high school grades in transcript of C+ or better.

Upon successful completion of one thousand (1000) hours of training within a nine (9) month period required by the Massachusetts Board of Registration of Cosmetology, the student is qualified to take the written and practical National Examination in Cosmetology for licensure.

**Minimum Grade Requirement:** A student must maintain a minimum grade of C (73%) in each cosmetology course in order to qualify for graduation.

**Attendance Requirement:** Attendance is compulsory because of the minimum hour requirement for graduation. The College does not provide for make up time due to absenteeism. If a student fails to meet the attendance requirement he/she may be dropped from the program.

**Course Prerequisites:** Course AC 107 is a prerequisite of Course AC 206. Course AC 108 is a prerequisite of Course AC 207. If a student fails Course AC 107 or AC 108 the first semester, he/she cannot continue the second semester. Course AC 206 and Course AC 207 are Lab courses where the students practice their techniques and procedures on patrons, therefore it is necessary for the student to pass the basic courses in the first semester. If a student fails either Course AC 107 or AC 108 the first semester, he/she may reapply for the following Fall semester. In this case the Massachusetts Board of Cosmetologists must be notified.

## COSMETOLOGY

Upon successful completion of requirements of this program, as listed below a **Certificate in Cosmetology** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
AC 100	Beauty Salon Management	3		3
AC 101	Principles of Cosmetology Theory	3		3
AC 107	Fundamentals of Applied Cos. 1	1	14	5
AC 108	Fundamentals of Applied Cos. 2	1	14	5
		9	28	16

### SEMESTER 2

AC 200	Basic Dermatology	3		3
AC 206	Supervised Lab. Practice 1	1	14	5
AC 207	Supervised Lab. Practice 2	1	14	5
NP 109	Human Relations at Work	3		3
		8	28	16

## Dental Assistant

The Dental Assistant curriculum encompasses the multi-disciplinary team concept. Theoretical skills are attained in conjunction with supervised off-campus clinical affiliation experiences. The curriculum conforms to the standards which are required by the Commission on Accreditation of Dental and Dental Auxiliary Educational Programs. Upon successful completion of the program, the student graduates with a Certificate in Dental Assistant and is eligible to take the Dental Assistant National Board Examination.

An applicant should be a High School graduate, or possess a G.E.D. equivalency with a college preparatory background in English, Biology (with a lab), Mathematics and Typing. The Scholastic Aptitude Test (SAT) is optional, but preferred. A verbal score of 350 is acceptable. The Nelson-Denny Reading Examination will be administered to those individuals who are accepted into the program. Application should be submitted to the Dean of Admissions. Students may choose to take their English requirements and General Psychology course during the College's summer sessions either preceding or following the academic year.

The Dental Assistant Program has two primary objectives: to prepare the student for employment as a professional member of the dental team, functioning as a competent dental assistant after graduation; and to prepare and motivate the student to continue his/her dental education by obtaining a degree in dental hygiene, or a baccalaureate degree. Advanced degrees



will enable the qualified student to participate in broader areas of the dental profession.

The minimum grade requirement for the Dental Assistant Program is a grade of "C" (2.0) in each course. Upon the successful completion of requirements for this program, as listed below, a **Certificate in Dental Assistant** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
AD 100	Dental Asst. Techniques 1	2	2	3
AD 105	Dental Sciences 1	2		2
AD 104	Dental Materials 1	2	3	4
AD 103	Dental Radiology 1	2	2	3
AD 102	Oral Anatomy	2		2
MB 127	Func./Structure of Human Sys.	2	2	3
		15	9	20

### SEMESTER 2

LE 203	Fundamentals of Speech	3		3
NP 100	General Psychology	3		3
AD 200	Dental Asst. Techniques 2	2	2	3
AD 201	Dental Sciences 2	3		3
AD 202	Dental Records	2		2
AD 203	Dental Radiology 2		2	1
AD 204	Clinical Affiliation		20	5
		13	24	20

## Dental Hygiene

The Dental Hygiene program educates men and women to become vital members of the dental health profession. The two-year basic core curriculum leading to an Associate degree follows the guidelines adopted by the American Dental Association's Commission on Dental Accreditation. The graduate is eligible for licensing examination in each of the fifty States. She/he may transfer credits toward a Baccalaureate degree.

The curriculum is designed to provide the student a broad educational experience. The student is thus prepared to render preventive oral health services and dental health education. Students receive clinical experience, not only at the STCC Dental Hygiene Clinic, but also through assignments to clinical and educational facilities within Hampden County. Assignments are supervised by STCC faculty. Students are responsible for providing

## DENTAL HYGIENE

their own transportation to clinical and educational facilities. The purchase of an instrument kit is mandatory for each dental hygiene student.

All courses listed in the program curricula are required for graduation. The dental hygiene courses are restricted to the semester in which they appear in the curricula. The curriculum customarily is completed within two regular academic years. However, advanced placement will be given to those students qualifying through challenge exams and transfer credits.

Applicants must have an academic background in biology, chemistry and mathematics. The Scholastic Aptitude Test (SAT) must be taken and scores totaling 800 or higher must be achieved. A college preparatory course in high school and academic rank in the upper ¼ of the graduating class are also necessary.

Students must achieve a minimum grade of "C" (73%) or better in each Dental Hygiene course. In addition, students must attain a minimum grade of C (73%) or better in related science or general studies courses.

Upon the completion of the requirements for this program, as listed below, the degree of **Associate in Science in Dental Hygiene** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MB 132	Anatomy & Physiology 1	3	2	4
MB 140	Biochemistry	3		3
AH 100	Oral Anatomy 1	2	1	3
AH 101	Clinical Practice 1	2	6	4
AH 102	Dental Radiology	1	2	2
		14	11	19

### SEMESTER 2

MB 121	Microbiology	3	3	4
MB 232	Anatomy & Physiology 2	3	2	4
AH 200	Nutrition	2		2
AH 201	Oral Pathology	2		2
AH 202	Clinical Practice 2	2	8	5
AH 203	Oral Anatomy 2	2		2
		14	13	19

### SEMESTER 3

NP 100	General Psychology	3		3
AH 300	Periodontology	2		2
AH 301	Dental Materials 1	2	3	3
AH 302	Pharmacology	2		2
AH 303	Clinical Practice 3	2	12	6
		11	15	16

**SEMESTER 4**

LE 203	Fundamentals of Speech	3		3
NS 100	Intro. to Sociology	3		3
AH 400	Community Dental Health	3		3
AH 401	Clinical Practice 4	2	12	6
AH 402	Applied Dental Auxiliary Skills	1	3	2
		<hr/>	<hr/>	<hr/>
		12	15	17

## Human Services Associate

The program prepares the Human Services Associate for a range of human services including mental health, developmental disabilities, social services, rehabilitation, education and gerontology. Academic courses are correlated with supervised practicum experiences providing competency based education. Generalist and gerontology concentrations are offered through a core curriculum. This multi-discipline approach to human services prepares the graduate for employment and continuing education.

*Practicum/Laboratory Requirement:* Prior to cooperating community agency placement, the student is required to have: 1) A current, completed physical examination record on file in the College nurse's office, including physical assessment, immunization and laboratory reports. 2) Current liability insurance policy.

Implementation of supervised practicum affiliation is based upon a College contract with the cooperating agency. Each student is required to have a personal interview prior to placement. Therefore, to complete the Practicum requirement the student must meet agency standards. The agency has the option to reject the student for placement. If the College is unable to successfully place the student with a cooperating community agency the student must withdraw from the program.

*Minimum Grade Requirement:* The Human Services student is required to earn a minimum course grade of "C" (73%) in each of the following courses: AM 101-Human Services 1; AM 201-Human Services 2; AM 300-Human Services 3; AM 400-Human Services 4; AM 301-Human Services Seminar 1; AM 401-Human Services Seminar 2; AT 101-Gerontology; AT 201-Gerontology 2.

A 2.0 or "C" average is required for the other courses incorporated in the Human Services Associate Program. In order to meet this minimum grade requirement, the student is required to attend all scheduled classes and practicum assignments. The student will be presented with a contract stating requirements for each semester. This document is signed mutually by the individual student and the Department Chairperson.

Transfer students, having completed required courses prior to acceptance in the department, are encouraged to take appropriate electives. These schedules are established on an individualized basis, through mutual en-

## HUMAN SERVICES ASSOCIATE

deavors of the student, Advisor and Department Chairperson. Specific bilingual/bicultural instruction is scheduled on an individual basis.

Upon the successful completion of requirements for this program, as listed below, the degree of **Associate of Science in Human Services Associate** will be awarded.

### Common Core Curriculum (1st Year)

#### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
NP 100	General Psychology	3		3
AM 101	Human Services 1	3	3	4
MB 138	Human Anatomy 1	3	2	4
AA 111	Human Sexuality	1		1
AA 112	Living and Dying	1		1
AA 113	Intro to Health/Human Services	1		1
		15	5	17

#### SEMESTER 2

LE 203	Fundamentals of Speech	3		3
NS 100	Intro. to Sociology	3		3
AM 201	Human Services 2	3	3	4
AA 211	Health Science 3	1		1
BZ 101	Typewriting 1	5		3
MB 238	Human Anatomy 2	3	2	4
		18	5	18

### Human Services Associate/Generalist Option

#### SEMESTER 3

AM 300	Human Services 3	3	12	9
AM 301	Human Services Seminar 1	3		3
AM 311	Applied Legal Concepts (Hum. Serv.)	1		1
BB 311	Basic Legal Concepts	1		1
	Elective: Social Science	3		3
		11	12	17

#### SEMESTER 4

LE 202	Technical Report Writing	3		3
NP 400	Principles of Normal/Abnormal Behavior	3		3
AM 400	Human Services 4	3	14	9
AM 401	Human Services Seminar 2	3		3
		12	14	18



**Human Services Associate/Gerontology Option****SEMESTER 3**

NS 300	Sociology of Aging	3		3
AM 301	Human Services Seminar 1	3		3
AT 101	Gerontology	3	12	9
AM 311	Applied Legal Concepts (Hum. Serv.)	1		1
BB 311	Basic Legal Concepts	1		1
		11	12	17

**SEMESTER 4**

LE 202	Technical Report Writing	3		3
NP 400	Principles of Normal/Abnormal Behavior	3		3
AM 401	Human Services Seminar 2	3		3
AT 201	Gerontology 2	3	14	9
		12	14	18

**Medical Assistant**

The two-year program prepares students to meet the rigorous demands of our health care delivery systems, be it at hospital, clinic, neighborhood health center, health maintenance organization, insurance company, group practice or a single physician's office. The program is jointly reviewed by the American Medical Association and the American Association of Medical Assisting and accredited by the Committee on Allied Health Education and Accreditation. Graduates of the program are eligible to take the national certification examination for Medical Assistants and Phlebotomists.

The curriculum is designed to prepare students to assist in administrative and clinical experiences in varied health care agencies during the externship period by performing such duties as typing, record keeping, billing, basic blood and urine tests as well as carrying out the skills of patient care. Graduates are qualified to accept positions in medical offices, clinics, health maintenance organizations, insurance companies, hospitals, ambulatory care centers, or any other area where their broad basic skills are needed.

*Minimum Grade Requirement:* To continue in the progression of courses offered in the Medical Assistant program, a student must obtain a grade of "C" (73%) or better in the following courses: AA 100 - Medical Assistant Techniques 1; AA 200 - Medical Assistant Techniques 2; AA 302 - Medical Assistant Techniques 3; AA 402 - Medical Assistant Techniques 4; and AA 301 - Intro. to Human Disease - Medical Assistant courses are planned in conjunction with the clinical agencies, and may deviate from the College hours.

Upon successful completion of requirements for this program, as listed below, the degree of **Associate In Science In Medical Assistant** will be awarded.

## MEDICAL ASSISTANT

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
MB 104	Human Biology 1	3	2	4
BZ 101	Typewriting 1	2	3	3
AA 100	Med. Asst. Tech. 1	2	4	4
AA 101	Medical Terminology	3		3
AA 111	Human Sexuality	1		1
AA 112	Living & Dying	1		1
BD 191	Computers in Health Care	1		1
AA 113	Intro. to Health/Human Services	1		1
		14	9	18

### SEMESTER 2

LE 100	English Composition 1	3		3
AA 200	Med. Asst. Tech. 2	2	4	4
AL 405	Basic Lab. Prac. for Med. Assistants	3	4	4
MB 204	Human Biology 2	3	2	4
BM 303	Medical Office Pract. 1	2		2
BP 106	Med. Asst. Recordkeeping	1		1
		14	10	18

### SEMESTER 3

NP 100	General Psychology	3		3
AA 303	Medical Asst. Tech. 3	1	14	4
AA 301	Intro. to Human Disease	3		3
BZ 251	Medical Typewriting	2	2	3
AA 119	Applied Legal Concepts (Med. Asst.)	1		1
AA 320	Pharmacology	3		3
BB 311	Basic Legal Concepts	1		1
		14	16	18

### SEMESTER 4

LE 201	Business English	3		3
BZ 454	Med. Mach. Transcript.	3		3
	Elective: Humanities	3		3
AA 402	Medical Asst. Tech. 4	1	14	4
	Elective: Social Science	3		3
		13	14	16

## Medical Laboratory Technician

This program offers an integrated curriculum which provides the student with a background in general education the basic skills necessary to function in a clinical laboratory. Fundamentals in clinical microscopy, microbi-

ology, hematology, immunohematology and clinical chemistry comprise the core curriculum. Clinical experience is obtained in a hospital laboratory with which the College has a contractual agreement. The clinical experience may not be sequential, but by arrangements, according to available clinical resources. In order to matriculate, students must have a minimum passing grade of "C" in all required courses.

Applicants must have completed a college preparatory course in high school which included biology, chemistry, and mathematics. SAT scores must be 400 or greater in mathematics and verbal skills with a total score of 800 or higher. When an applicant receives notification of acceptance to the program, he/she is required to make arrangements to visit a clinical laboratory and present an affidavit verifying same on the first day of school. Graduates of the program are eligible for national certification by successful passing a written examination given by a certifying agency.

Clinical laboratory practicum includes a summer session which may not be sequential to the academic program, depending on availability of placement. It may be planned in the Fall Semester. Students must be mindful that placement will require travel and that they are responsible for their own transportation and maintenance. Students are charged tuition for the Summer Session at the regular Division of Continuing Education rate. This program is accredited by the Committee in Allied Health Education and Accreditation of the American Medical Association. Upon successful completion of the program requirements as listed below, the degree of **Associate In Science In Medical Laboratory Technician** will be awarded.

### **SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MC 101	General Chemistry 101	3	3	4
MB 133	Anatomy & Physio./MLT	3	3	4
AL 100	Intro. to Clinical Lab 1	2	2	3
AA 110	Health Science 1	3		3
		<hr/>	<hr/>	<hr/>
		14	8	17

### **SEMESTER 2**

LE 200	Comp. 2: Intro. to Lit.	3		3
MC 201	General Chemistry 102	3	3	4
AL 200	Intro. Med. Microbiology	3	4	5
AA 211	Health Science 3	1		1
MM 140	Statistics & Quality Control	4		3
		<hr/>	<hr/>	<hr/>
		14	7	16

### **SEMESTER 3**

MC 350	Instrumental Analysis	2	4	4
MB 140	Biochemistry	3		3
AL 300	Hematology & Coagulation	3	3	4
AL 302	Clinical Chemistry	3	3	4
		<hr/>	<hr/>	<hr/>
		11	10	15

## MEDICAL LABORATORY TECHNICIAN

### SEMESTER 4

AL 400	Immunohematology	3	3	3
AL 401	Parasitology	2	2	2
AL 402	Intro. to Immunology	2	2	2
AL 403	Clinical Lab Practicum 1	2	38	4
BB 311	Basic Legal Concepts	1		1
		10	45	12

### SUMMER SESSION

AL 404	Clinical Lab Practicum 2	2	38	8
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## Nuclear Medicine Technology

This two-year, twenty-four month, intensive program begins in September and terminates twenty-four months later in September. It teaches the students to prepare radiopharmaceuticals for administration to patients for diagnostic procedures and then to position and scan the patient for the appropriate information. The affiliate hospitals at the BayState Medical Center, Holyoke and Mercy Hospitals maintain a large inventory of modern imaging equipment. On clinical affiliation, the student learns to operate each piece of equipment and to interact with supportive medical departments such as diagnostic radiology, surgery, medical sonography, and medical physics. During the college year the students spend full days at the hospital, two or three practicum, and other days at the College on course work. This curriculum includes two summer sessions. Students are charged for these sessions at the regular Division of Continuing Education rate.

The Advanced Standing Program for NMT requires a 16 month course of study. Those students transferring into the program with A.S. in an allied field, such as Radiologic Technology or Radiation Therapy will be required to take a placement examination in Radiation Protection and mathematics to the level required for standard entrance. Those students from hospital-based programs in addition will be required to take placement tests in radiological physics, nuclear physics, Anatomy and Physiology 1 and 2, English Composition 1, and any other English elective. Students passing those examinations will be granted transfer credit in those areas. Graduates of the Advanced Program are eligible for the January ARRT and June NMTCB examinations.

Minimum course requirement for graduation in all subjects is a grade of "C" or better. At graduation the student receives an Associate in Science in Nuclear Medicine Technology and is eligible to sit for the national registry examination given by the ARRT and the Nuclear Medicine Technology Certification Board. Application for the September class should be submitted to the Admissions Office before the 5th of January, to be considered for the first round of acceptances; however, applications are accepted throughout the year. There is a provision for accepting students



during the semester whenever clinical space is available. Applicants should have completed Algebra 1 & 2 and a biological *and* physical science. Students are responsible for the cost of uniforms, radiation monitors, physical examinations, health insurance, liability insurance, books, calculator, and laboratory manuals.

Upon the successful completion of the requirements listed below, the degree of **Associate in Science in Nuclear Medicine Technology** will be awarded.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
AZ 102	Intro. to Nuclear Medicine Tech.	3		3
AZ 103	Practicum		16	2
AZ 104	Orientation to Practicum		16	
AA 101	Medical Terminology 1	3		3
AA 210	Health Science 2	2	2	3
MB 132	Anatomy & Physiology 1	3	2	4
MP 146	Radiation Protection	1		1
		12	36	16

## SEMESTER 2

AZ 204	Statistics and Instrumentation	3		3
AZ 207	Practicum		16	2
AA 111	Human Sexuality	1		1
AA 112	Living and Dying	1		1
AA 113	Intro. to Health/Human Services	1		1
AA 116	Prin/Pract of Phlebotomy	1		1
MB 232	Anatomy & Physiology 2	3	2	4
		10	18	13

## SUMMER 1 (12 Weeks)

AZ 209	Practicum		40	5
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## SEMESTER 3

AZ 301	Practicum		24	5
AZ 302	Nuclear Imaging of Organs	3		3
AZ 305	Computer Sci. for Nuclear Med. Tech.	1		1
LE 100	English Composition 1	3		3
MP 300	Radiologic Physics 1	3	2	4
		10	26	16

## SEMESTER 4

AZ 401	Practicum		24	5
AZ 414	In Vitro and Non-Imaging Studies	2		2
AZ 411	Nuclear Cardiology & Other Organ Anal.	1		1
MP 400	Nuclear Physics 1	3	2	4
	Elective: English	3		3
AA 114	Cardiopulmonary Resuscitation	1		
AX 414	Radiation Biology	1		1
		11	26	16

# NUCLEAR MEDICINE TECHNOLOGY

## SUMMER 2 (13 Weeks)

AZ 407	Radioassay Laboratory Practicum (4 Wks.)	1	20	2
AZ 410	Practicum (9 wks.)		40	5
		<hr/>	<hr/>	<hr/>
		1	60	7

## Nuclear Medicine Technology

### Advanced Standing Option

The Nuclear Medicine Technology program also offers the option of admission with advanced standing for students who have successfully completed the graduation requirements for the Radiation Therapy Technology or Radiologic Technology programs at STCC. Such students are eligible for a 12-month program in Nuclear Medicine Technology. Graduates of Radiation Therapy and Radiologic Technology programs from other institutions will also be eligible for advanced standing, but course requirements may vary depending on their academic background, employment background, and clinical hours of previous training.

Challenge examinations are available for the two semester physics sequence MP146; MP300; MP400. The Practicum sequence can also be evaluated and portions challenged. Potential applicants should notice that the program is very intensive and is virtually full-time for 12 months. Course deficiencies cannot be taken concurrently with the program. However, the program director can advise a remedial schedule for an extended semester(s) before entrance.

## SEMESTER 1 (Fall)

No.	Course Title	Class	Lab	Credits
AZ 102	Intro. to Nuclear Medicine Tech.	3		3
AZ 302	Nuclear Imaging of Organs	3		3
AZ 305	Computer Sciences for NMT	1		1
AZ 304	Practicum (Into January)		30	3
AA 114	Cardio Pulmonary Resuscitation	1		
		<hr/>	<hr/>	<hr/>
		8	30	10

## SEMESTER 2 (Spring)

AZ 204	Statistics and Instrumentation	3		3
AZ 414	In Vitro and Non-Imaging Studies	2		2
AZ 411	Nuclear Cardiology	1		1
AA 116	Prin./Pract. of Phlebotomy	1		1
AZ 409	Practicum (Into May/June)		30	3
AX 414	Radiation Biology	1		1
		<hr/>	<hr/>	<hr/>
		8	30	11

## SEMESTER 3 (Summer - 15 Weeks)

AZ 407	Radioassay Lab Practicum (4 weeks)	1	20	2
AZ 410	Practicum (9 weeks)		40	5
		<hr/>	<hr/>	<hr/>
		1	60	7

**SEMESTER 4 (Fall)**

AZ 413	Practicum		40	5
AA 114	Cardio Pulmonary Resuscitation	1		
		<hr/>	<hr/>	<hr/>
		1	40	5

## Nursing

The nursing curriculum is planned to prepare men and women to be professional nurses who will be competent to render safe and effective nursing care to people within the normal life cycle, both in health and illness. The community-centered approach combines both liberal and technical education for the student within the College and community health facilities. The student who successfully completes the prescribed curriculum earns the degree of Associate of Science and is eligible to take the licensing examination to qualify as a Registered Nurse. The program is approved by the Massachusetts Board of Registration in Nursing. It also has full accreditation by the National League for Nursing. Prerequisites for admission to the Nursing Program call for the applicant to be a high school graduate or equivalent. The candidate also must have completed courses in algebra 2, chemistry and biology. The SAT's are required for admission with minimum scores of 450 on both the verbal and math portions of the test.

In order for a student to matriculate in the Division of Nursing, the student must maintain a quality point average of 2.30 in each nursing course.

This passing grade will be recorded as:

Quality Point Average	Letter Grade	Numerical Grade
2.30	C+	77%

The final course grade is calculated as follows:

1. Two term exams, (one mid-term and one end term), to be followed by one comprehensive final exam. Grading of the three exams must average 2.30 (77%) in order to pass the course. These three exams will have equal weight.
2. A student must pass the clinical portion of the course in order to qualify to write the final exam (grading for clinical portion is Pass-Fail).
3. An average of 2.30 (77%) on the three exams is required to pass the course.

The final course grade, if below 2.30 (77%) will be recorded as a letter grade with transcript stamped: NOT ELIGIBLE FOR MATRICULATION IN NURSING.

4. Without exception, no more than one failed nursing course may be repeated.

# NURSING

## Eligibility for Promotion:

- Students must attend scheduled lectures and clinical hospital laboratories.
- Students must pass academically and clinically.
- Students must achieve a Q.P.A. of 2.0 (73%) in the natural and biological sciences.

The Nursing math module (MM 077) must be successfully completed prior to AN 100, or by the end of the twelfth week of AN 100. Students must attain at least a "C" in related science courses, or a cumulative grade point average of 2.0. The clinical segments of the Nursing courses are planned in conjunction with the clinical agencies, and may deviate from the College hours.

Policy for L.P.N. challenge of AN 100: A challenge examination will be administered only after an L.P.N. with current registration has been fully admitted as a student in the Division of Nursing. Guidelines that must be followed to successfully complete the challenge process for AN 100 are:

- write challenge examination to validate knowledge of concepts presented in AN 100
- attain a 77% (2.3) as the minimum passing grade (Challenge exam may not be re-taken.)
- participate in a mini-series in the on-campus simulated lab for review and updating of basic nursing skills
- attend module III classes on nursing process

Students who successfully complete the above guidelines will receive a course grade equivalent to the grade achieved on the challenge exam for AN 100.

Upon successful completion of requirements for the Nursing program, as listed below, the degree of **Associate in Science in Nursing** will be awarded.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
MB 132	Anatomy & Physiol. 1	3	2	4
NP 100	General Psychology	3		3
AN 100	Nursing 1	4	10	7
MM 077	Math for Nursing	1		1
*BD 191	Computers in Health			
		12	12	16

## SEMESTER 2

LE 100	English Composition 1	3		3
MB 232	Anatomy & Physiol. 2	3	2	4
NP 400	Prin. of Norm./Abn. Behav.	3		3
AN 200	Nursing 2	4	10	7
		13	12	17

\*May be challenged by students with prior experience.



**SEMESTER 3**

MB 121	Microbiology	3	3	4
NS 100	Intro. to Sociology	3		3
AN 300	Nursing 3	4	15	9
		<hr/>	<hr/>	<hr/>
		10	18	16

**SEMESTER 4**

AN 400	Nursing 4	4	15	9
AN 401	Nursing 5	2		2
	Elective: Soc. Science	3		3
	Elective: Hum. (English)	3		3
		<hr/>	<hr/>	<hr/>
		12	15	17

## Physical Therapist Assistant

The objective of this program is to prepare men and women for employment in the physical therapy field. The graduate physical therapist assistant works under the direction and supervision of a registered physical therapist performing patient-related activities and other tasks required for the operation of the service. The two-year curriculum leading to an Associate Degree follows the guidelines adopted by the American Physical Therapy Association. The curriculum is designed to develop technical knowledge and skills and background information for understanding in anatomy, physiology, kinesiology, disease processes, psychological and interpersonal relations. In addition, emphasis is placed on ethical and legal aspects. Approximately one semester of the program is supervised practice in selected clinical settings.

*Minimum Grade Requirement:* The Physical Therapist Assistant student must obtain a minimum grade of "C" (73%) in each of the following courses: AP300 - Medical Lectures; AP200 - Kinesiology; AP 100 - Physical Therapist Assistant 1; AP201 - Physical Therapist Assistant 2; AP301 - Physical Therapist Assistant 3; AP400 - Supervised Clinical Experience; AP401 - Supervised Clinical Experience; AP302 - Muscle Testing; and AP402 - Physical Therapist Assistant Seminar and MB132 - Anatomy and Physiology. In addition to the above requirement, the student must have earned a minimum of 70 credits with a cumulative quality point average of 2.0 in order to be eligible for graduation.

Senior students in Physical Therapist Assistant will take their Spring vacation during the week following their second five week affiliation. This will

## PHYSICAL THERAPIST ASSISTANT

occur one or two weeks after the regularly scheduled College Spring vacation.

Upon the successful completion of the requirements for this program, as listed below, the degree of **Associate in Science in Physical Therapist Assistant** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MB 132	Anatomy & Physiology 1	3	2	4
NP 100	General Psychology	3		3
AP 100	Phys. Therapist Asst. 1	2	4	4
NS 100	Intro to Sociology	3		3
		14	6	17

### SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
MB 232	Anatomy & Physiology 2	3	2	4
AP 200	Kinesiology	3	2	4
	Elective	3		3
AP 201	Phys. Therapist Asst. 2	2	4	4
		14	8	18

### SEMESTER 3

AP 300	Medical Lectures	3		3
AP 301	Phys. Therapist Asst. 3	2	4	4
AP 302	Muscle Testing	1		1
	Elective	3		3
AA 211	Health Science 3	1		1
BB 311	Basic Legal Concepts	1		1
		11	4	13

### SEMESTER 4

AP 403	Supervised Clin. Exp.		18	6
AP 404	Supervised Clin. Exp.		18	6
AP 402	Physical Therapist Asst. Seminar	1		1
		1	36	13

## Radiation Therapy Technology

This program is designed to prepare students for entry-level positions as staff technologists, working as an essential element in the health care team, using radiation for the treatment of disease. Students are exposed

to the full range of radiation therapy equipment available and develop proficiency in delivering a planned course of treatment.

During the academic year, students spend alternating days in Practicum at the clinical sites and at the College for classroom instruction. The 12-week summer sessions involve full-time clinical instruction, and students are charged through the Division of Continuing Education.

Students must maintain grades of "C" (73%) or better in all subjects in order to be eligible for graduation from the program. Upon successful completion of the program requirements, the student is awarded the degree of Associate in Science in Radiation Therapy Technology. The program is accredited by the Joint Review Committee on Education in Radiologic Technology, and graduates are eligible to take the national examination administered by the American Registry of Radiologic Technology.

Applicants must have a high school diploma or equivalent, having completed Algebra II, a biological and/or physical science. Minimum SAT scores of 400 each in Verbal and Math are required.

Upon the successful completion of requirements for this program, below, the degree of **Associate of Science in Radiation Therapy Technology** will be awarded.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
AY 103	Practicum		8	2
AA 101	Medical Terminology 1	3		3
AA 210	Health Science 2	2	2	3
AX 113	Medical Ethics and Law	1		1
MB 132	Anatomy & Physiology 1	3	2	4
MP 146	Radiation Protection	1		1
AY 104	Intro. to Radiation Oncology	3		3
		13	12	17

## SEMESTER 2

AY 207	Practicum		12	3
AA 111	Human Sexuality	1		1
AA 112	Living and Dying	1		1
AA 113	Intro to Health/Human Services	1		1
BD 191	Computers in Health Care	1		1
MB 232	Anatomy & Physiology 2	3	2	4
AY 209	Dosimetry & Treatment Planning	3	2	4
		10	16	15

## SUMMER 1 (12 Weeks)

AY 208	Practicum		40	5
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# RADIATION THERAPY TECHNOLOGY

## SEMESTER 3

AY 301	Practicum		20	5
AY 303	Radiographic Imaging	1		1
LE 100	English Composition 1	3		3
MP 300	Radiologic Physics 1	3	2	4
AY 304	Clinical Oncology 1	3		3
		10	22	16

## SEMESTER 4

	Elective: English	3		3
AY 401	Practicum		20	5
MP 400	Nuclear Physics 1	3	2	4
AY 408	Clinical Oncology 2	2		2
AA 114	Cardiopulmonary Resuscitation	1		
AX 414	Radiation Biology	1		1
		10	22	15

## SUMMER 2 (12 Weeks)

AY 407	Practicum		40	5
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## Radiation Therapy Technology Advanced Standing Option

The Radiation Therapy Technology program also offers the option of admission with advanced standing for students who have successfully completed the graduation requirements for Radiologic Technology or Nuclear Medicine Technology at STCC. Such students are eligible for a 12-month program in Radiation Therapy Technology. Graduates of Radiologic Technology and Nuclear Medicine Technology from other schools will also be eligible for advanced standing, but course requirements may vary depending on their academic and employment backgrounds. Applicants with clinical experience in Radiation Therapy may challenge the practicum, and will be evaluated for clinical competency during the interval between acceptance into the program and the start of the academic year.

Applicants who have graduated from hospital-based certificate programs in Radiologic Technology or Nuclear Medicine Technology are required to satisfy certain general education requirements in order to be eligible to receive an Associate degree. Credits may be obtained by the official Challenge system, by the CLEP program through the Division of Continuing Education, or by enrollment in the specified courses. The general education requirements are as follows: MB132-Anatomy & Physiology 1; MB133-Anatomy & Physiology 2; MP300-Radiologic Physics; MB400-Nuclear Physics; LE100-English Composition 1; English Elective.



**SEMESTER 1**

No.	Course Title	Class	Lab	Credits
AY 104	Intro to Radiation Oncology	3		3
AY 304	Clinical Oncology 1	3		3
AY 303	Radiographic Imaging (NMT Only)	1		1
AY 310	Practicum		25	6
AA 111	Human Sexuality	1		1
AA 112	Living and Dying	1		1
AA 113	Intro. to Health/Human Services	1		1
		10	25	16

**SEMESTER 2**

AY 209	Dosimetry & Treatment Planning	3	2	4
AY 408	Clinical Oncology 2	2		2
AA 114	Cardiopulmonary Resuscitation	1		
AY 410	Practicum		25	6
		6	27	12

**SUMMER 1 (12 Weeks)**

AY 407	Practicum		40	5
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## Radiologic Technology

The Radiologic Technology program prepares an individual to become a member of the allied health team, assisting in the diagnostic methodologies of radiology. The program is based on a twenty-four month curriculum, and students should expect to complete requirements within this two-year period.

The affiliate hospitals of Baystate Medical Center provide the major clinical component. Travel arrangements to and from the affiliates are the responsibility of the student. Minor affiliations are available on a limited basis. Intersessions and summer sessions provide the major clinical component of the program. Additional clinical experience is assigned during the academic semesters. Students are charged for these periods according to College policy.

The College provides all didactic and laboratory classes. An energized x-ray unit, various phantoms (artificial body parts), and auxiliary equipment allow the student the development of psychomotor skills prior to patient exposure. Courses in anatomy and physiology, physics, computers, patient care, and general education complete the curriculum.

Upon completion of the program, students are eligible to take the national board examination in radiologic technology, administered by the American Registry of Radiologic Technology. In addition, students shall receive an Associate in Science in Radiologic Technology degree.

## RADIOLOGIC TECHNOLOGY

The program is accredited by the Committee on Allied Health Education and Accreditation (CAHEA) of the American Medical Association. Copies of the *Essentials of an Accredited Educational Program for the Radiographer* are available from the office of the Coordinator of Radiologic Health Sciences.

Minimum course requirement for graduation in all subjects is a "C" (73%). A student's progress through the program will be terminated for failure to follow departmental policies, hospital policies, and/or College policies, or to maintain a "C" average. Specific prerequisites are listed with the courses.

Applicants for admission to the program should have completed two years of high school algebra and one year each of biology and chemistry.

Final acceptance into the Radiologic Technology program is dependent upon a student's score on the math placement test given to all incoming students. It is necessary to place at a level of MM 101 or higher. This indicates proficiency in high school level algebra. (Exemptions may be given based on the award of equivalent transfer credit in college mathematics.) Students placing below MM 101 should register to take MM 100 during the summer term before entering the program.

NOTE: Clinical Orientation I and II are required prior to Clinical Practicums I and II, respectively.

Upon the successful completion of the requirements for the program, as listed below, the degree of **Associate in Science in Radiologic Technology** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
AX 111	Radiographic Positioning 1	3	2	4
AX 112	Radiographic Technique 1	2	1	2
AX 113	Medical Ethics and Law	1		1
AA 101	Medical Terminology 1	3		3
AA 210	Health Science 2	2	2	3
MB 132	Anatomy and Physiology 1	3	2	4
MP 146	Radiation Protection	1		1
		15	7	18

### INTERSESSION 1 (1 Week)

AX 001	Clinical Orientation 1		40	
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### SEMESTER 2

AX 211	Radiographic Positioning 2	3	2	4
AX 212	Radiographic Technique 2	2		2
AX 213	Clinical Practicum 1		16	2
AA 111	Human Sexuality	1		1
AA 112	Living and Dying	1		1
AA 113	Intro to Health and Human Services	1		1
BD 191	Computers In Health Care	1		1
MB 232	Anatomy and Physiology 2	3	2	4
		12	20	16

**SUMMER 1 (9 Weeks)**

AX 214	Clinical Practicum 2	40	5
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**SEMESTER 3**

AX 311	Special Procedures in Radiography	2		2
AX 312	Radiographic Technique 3	3	1	3
AX 313	Clinical Practicum 3		24	3
LE 100	English Composition 1	3		3
MP 300	Radiologic Physics 1	3	2	4
		11	27	15

**INTERSESSION 2 (1 Week)**

AX 002	Clinical Orientation 2	40
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**SEMESTER 4**

AX 411	Radiologic Pathology	1		1
AX 412	Ancillary Theory and Procedures	1		1
AX 413	Seminar/Quality Control	3		3
AX 414	Radiation Biology	1		1
AX 415	Clinical Practicum 4		24	3
MP 401	Radiologic Physics 2	3	2	4
	Elective: English	3		3
AA 114	Cardiopulmonary Resuscitation	1		
		13	26	16

**SUMMER 2 (9 Weeks)**

AX 416	Clinical Practicum 5	40	5
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## Respiratory Therapy

Respiratory Therapy is a health specialty involved in the treatment, management, diagnosis and care of patients with lung disease and cardiopulmonary dysfunction.

The Respiratory Therapist is an expert in the use of therapeutic gases, ventilatory support, aerosol administration, bronchiopulmonary drainage and exercises, cardiopulmonary resuscitation, medications, humidification and maintenance of natural, artificial and mechanical airways.

Therapists are also involved in diagnostic testing, monitoring, treatment, education, and research. These include the measurement of lung volumes, pressures, flows, blood gas analysis and other related physiological monitorings.

For the tactful, stable and responsible man or woman, Respiratory Therapy offers the chance to work closely with patients in a career which is both personally and financially rewarding.

The graduate registered therapist is assured of rapid advancement in a field where there are apt to be more jobs than therapists to fill them. While the greater number of graduates work in hospitals or hold teaching posi-



## RESPIRATORY THERAPY

tions, the future undoubtedly will see openings in industry, rehabilitation centers and home care programs.

This program is sponsored by the College in cooperation with area hospitals and is fully accredited by the Joint Review Committee of Respiratory Therapy.

The curriculum includes a summer session. Students are charged for this session at the regular Division of Continuing Education rate.

### 1. Admissions Requirements

High School graduate or equivalent

**PREREQUISITES:** College algebra (math MM 091, MM 092, MM 093 or its equivalent), biology, and chemistry.

SAT's greater than 400 in math & verbal.

Students must submit a required health form prior to September 1 in the year of their initial enrollment.

Any disabilities must be within safe limits for both students and patients. It should be noted that the affiliating hospitals require by contract proof of satisfactory health, and reserve the right to refuse affiliation for students. Therefore, health status is subject to contract terms.

Students' physical and mental ability must withstand the vigorous demands of respiratory therapy (i.e., able to climb stairs rapidly and work under stress).

### 2. Academic Requirements

No grade lower than a "C" (73%) will be accepted toward graduation in respiratory therapy.

Students not meeting the grade requirement of "C" (73%) for courses in the first and second semesters will be withdrawn from the program. Students not meeting the grade requirement for courses in the third and fourth semesters will be on probation for one additional year. Students must retake the course and achieve the minimum passing grade. Failure to receive a satisfactory grade within the probationary period will result in dismissal from the program.

Failure in an affiliation course will result in dismissal from the program. Grades of less than "C" will not be accepted in transfer.

The following clinical lab courses may have a 7:00 A.M. starting time.

AR 301 Respiratory Therapy II

AR 400 Respiratory Therapy III

AR 401 Respiratory Therapy IV

AR 200 Respiratory Therapy Physics

Upon successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Respiratory Therapy** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
AR 102	Respiratory Anatomy & Physiology	2		2
AR 103	Respiratory Physics I	2	2	3
MB 132	Anatomy & Physiology 1	3	2	4
MC 101	General Chemistry 101	3	3	4
AA 111	Human Sexuality	1		1
AA 112	Living & Dying	1		1
AA 113	Intro. to Health/Human Services	1		1
		13	7	16



**SEMESTER 2**

LE 100	English Composition 1	3		3
MB 232	Anatomy & Physiology 2	3	2	4
MC 201	General Chemistry 102	3	3	4
AR 204	Respiratory Therapy 2	3	2	4
AA 211	Health Science 3	1		1
BD 191	Computers in Health Care	1		1
		14	7	17

**SUMMER 1 (8 weeks)**

AR 210	Resp. Pharmacology	4		2
AR 212	Resp. Rehabilitation	4	20	7
		8	20	9

**SEMESTER 3**

MB 121	Microbiology	3	3	4
AR 300	RT Appl./Clinical Sci. 1	3		3
AR 304	Respiratory Therapy 3	3	12	9
AR 303	Intensive Resp. Care	3		3
		12	15	19

**SEMESTER 4**

AR 401	Respiratory Therapy 4		8	4
AR 402	RT Appl./Clin. Sci. 2	3	8	7
AR 403	Pulmonary Func. Test.	1	2	2
LE 200	Comp. 2: Intro. to Lit.	3		3
AR 404	Hemo Dynamic Monitor	2		2
		9	18	18

## Surgical Technology

The objective of the Surgical Technology program is to prepare men and women to function as members of a surgical team, or as assistant to the surgeon, anesthesiologist, or professional nurse in the operating room, delivery room, emergency room or surgeon's office. The program combines theory and practice of surgical asepsis in the operating room, delivery room, emergency room and central service department. It is designed to develop knowledge and skill in maintaining aseptic techniques within the hospital area. Degree requirements include the successful completion of one-year coursework, followed with another year of course work at the College, combined with clinical training. Students must maintain a minimum 2.0 Q.P.A. in the freshman year to be eligible for clinical training during the second year of the program. Prerequisites for admission to the Surgical Technology program call for the applicant to be a high school graduate or equivalent. The candidate also must have completed courses

## SURGICAL TECHNOLOGY

in Algebra 2, Chemistry and Biology, and have taken the SAT. Graduates of this program are eligible for the A.S.T., (A.O.R.T.) Certifying Examination approved by the A.S.T. (A.O.R.T.) Advisory Board composed of representatives from the Association of Surgical Technologists, Inc., Association of Operating Room Nurses, Inc., American Hospital Association and American College of Surgeons. The student enrolled in the Surgical Technology program must obtain a minimum grade of "C" (73%) in the following courses:

MB 132 Anatomy & Physiology 1  
 MB 232 Anatomy & Physiology 2  
 MB 121 Microbiology  
 AO 100 Foundations of ORT 1  
 AO 200 ORT 2  
 AO 300-301 ORT 3  
 AO 401-402 ORT 4  
 AO 400 Seminar/Surgical

Upon successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Surgical Technology** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MB 132	Anatomy & Physiol. 1	3	2	4
NP 100	General Psychology	3		3
AO 100	ORT 1	3	4	5
AA 111	Human Sexuality	1		1
AA 112	Living & Dying	1		1
		14	6	17

### SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
MB 121	Microbiology	3	3	4
MB 232	Anatomy & Physiol. 2	3	2	4
AO 200	ORT 2	3	4	5
		12	9	16

### SEMESTER 3

AO 301	ORT 3	2	12	5
AO 303	ORT 3	2	10	4
AO 302	Pharmacology/ORT	3		3
	Elective: Social Science	3		3
MP 321	Intro to Laser Physics	1		1
		11	22	16

**SEMESTER 4**

AO 400	Seminar/Surgical	3		3
AO 401	ORT 4	2	12	5
AO 402	ORT 4	2	12	5
AA 102	Health Sci. & The Law	3		3
		<hr/>	<hr/>	<hr/>
		10	24	16

# Business Administration





# Business Administration

The Business Administration department offers a variety of programs to satisfy the needs of its students, whether it be the desire to transfer to a four-year college or university to complete the Baccalaureate Degree or enter the field of business directly from STCC. The main objective of the Department is to enable the student to develop those skills and proficiencies that are essential to the competent performance of professional work either in the classroom or on the job.

There is a comprehensive range of elective courses available in each of the degree programs. These electives allow the student and faculty advisor to structure a program consistent with specific interests and goals. The following illustrates the programs at STCC:

## **Associate in Science in Business Administration**

- Accounting
- Finance
- Management
- Small Business Management Option
- Marketing
- General Business
- General Business/Transfer Compact Option

The Accounting, Finance, Management, Small Business Management, Marketing and General Business degrees or options require a minimum of 21 credits of liberal arts, math and science courses and the remaining 42 credits in business and general course electives. These programs are designed to meet career objectives or transfer goals to many four-year colleges. The General Business/Transfer Compact Option requires a minimum of 33 credits of liberal arts, math and sciences courses and the remaining 30 credits in business and general course electives. This program is designed to meet transfer requirements to four-year *Public* colleges or universities that are members of the Commonwealth Transfer Pact.

## **Certificate in Business Administration (1 Year Program)\***

- Small Business Management
- Administrative Bookkeeping

\*These programs are offered through the Division of Continuing Education and upon successful completion, graduates are awarded a Certificate by Springfield Technical Community College.

A minimum grade point average of 2.0 is required in both general and specialized areas to graduate.

Challenge and CLEP exams covering a number of career and general courses are available at STCC.

## CORE CURRICULUM:

The Department of Business Administration provides a common curriculum in the Freshman year for all Associate Degree programs, exposing students to a variety of introductory business courses before they choose a degree and a major. The English and math courses you will be assigned are based upon college placement tests. Depending on your results, you may have to take courses LD-099 English Composition Skills or course MM-071 Basic Arithmetic, MM-081 Algebra I or MM-091 Algebra II. While such courses may have to be taken to meet minimum prerequisites, they are considered developmental and will not count toward graduation in the Business Department.

### Freshman Year

Common Core Requirements for all Associate Degree programs.

#### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MM 142	Statistics 1 or			
MM 122	Finite Math 1 (Note 1)	3		3
BA 110	Accounting 1	5		4
BK 110	Principles of Management	3		3
BD 101	Computer Concepts	3	2	4
		17	2	17

#### SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
	Math or Humanities or Social			
	Science Elective (Note 1)	3		3
BA 210	Accounting 2	5		4
BF 110	Intro. to Finance	3		3
BI 110	Principles of Marketing (Note 2 and 3)	3		3
		17		16

#### NOTES:

(1) Transfer students **must** take MM 122 Finite Math 1 in Semester 1 and MM 222 Finite Math 2 in Semester 2. Career students should take MM 142 Statistics 1 in Semester 1 and MM 242 Statistics 2 or a Humanity or Social Science elective in Semester 2.

(2) Students enrolled in the Small Business Management Option should take BP 112 Small Business Marketing.

(3) Students enrolled in the Division of Continuing Education who are in the Business Program and concentrating in the specialized areas of Insurance, Real Estate, or Banking, could substitute BP 111 Principles of Insurance or BP 110 Principles of Real Estate, or BF 111 Principles of Banking.

**Business Administration—Associate in Science Degree**

The information that follows illustrates the course sequence for the second year of study.

**ACCOUNTING**

The demand for trained accountants has increased substantially with the growth and complexity of business and government. Students of accounting, therefore, must follow a program of training which prepares them to handle the financial accounts of private and public organizations. The modern accountant must have an appreciation of all aspects of business organizations as well as technical proficiency in the following accounting matters: maintaining accurate accounting records; preparing and analyzing financial statements and cash flow reports; calculating payroll and payroll taxes; and understanding the basics of the partnership and corporate forms of business. Manpower projections have typically shown that accountants are among those who are in high demand and well paid.

**Senior Year Courses****SEMESTER 3**

No.	Course Title	Class	Lab	Credits
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
BB 310	Business Law 1	3		3
BA 311	Cost Accounting	4		3
BA 310	Intermediate Acct. 1	4		3
		17		15

**SEMESTER 4**

NE 200	Economics 2	3		3
BA 410	Intermediate Acct. 2	4		3
BB 410	Business Law 2	3		3
BF 411	Managerial Finance (or)			
BA 313	Federal Income Tax	3		3
	Elective: General	3		3
		16		15

Upon the successful completion of the requirements for this program, as listed above, the degree of **Associate in Science in Business Administration-Accounting** will be awarded.

**FINANCE**

A study of the field of finance exposes the student to the sources and uses of money. Such a curriculum includes courses in the raising of new capital, the efficient use of available funds, investing, money and banking, the

## BUSINESS ADMINISTRATION

Federal Reserve System and other basic studies related to the monetary system. Emphasis is given to analysis of financial statements as well as fiscal planning and management.

### Senior Year Courses

#### SEMESTER 3

No.	Course Title	Class	Lab	Credits
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
BB 310	Business Law 1	3		3
BF 310	Money & Banking	3		3
BA 312	Managerial Accounting	3		3
		<hr/>		
		15		15

#### SEMESTER 4

NE 200	Economics 2	3		3
BB 410	Business Law 2	3		3
BF 411	Managerial Finance	3		3
BF 410	Investments	3		3
	Elective: General	3		3
		<hr/>		
		15		15

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Business Administration-Finance** will be awarded.

## MANAGEMENT

The management program at STCC is designed to give the student a comprehensive background in the area of management. The curriculum is student-oriented primarily because its content respects the student's need for a challenging, thorough examination of the field of management, and because it provides a sound foundation for further study. In addition, specialized courses such as personnel, labor relations, finance, productions and operation research provide the student with the necessary knowledge to make positive contributions to any commercial or non-commercial organization.

### Senior Year Courses

#### SEMESTER 3

No.	Course Title	Class	Lab	Credits
NE 100	Economics I	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
BB 310	Business Law 1	3		3
BK 310	Personnel Management	3		3
BA 312	Managerial Accounting	3		3
		<hr/>		
		15		15



**SEMESTER 4**

NE 200	Economics 2	3	3
BB 410	Business Law 2	3	3
BK 410	Labor Relations	3	3
BK 411	Production Management (or)		
BK 412	Techniques of Management	3	3
	Elective: General	3	3
		<hr/>	<hr/>
		15	15

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Business Administration-Management** will be awarded.

**SMALL BUSINESS MANAGEMENT OPTION**

In the Greater Springfield area many business are classified as small businesses by the Federal Government. Over the last few years the Federal and State governments have begun to recognize the importance of the small business in our society and community. In order that these businesses not be eliminated, special tax incentives and loan guarantees have been proposed and some enacted. In addition, Small Business Development Centers have been created across the state to provide increased technical assistance.

The Business Department believes that the owners and professional staff of small businesses need a specially tailored curriculum that will provide the technical expertise to operate successfully.

**Senior Year Courses****SEMESTER 3**

No.	Course Title	Class	Lab	Credits
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
BB 412	Small Business Law & Insurance	3		3
BA 314	Small Business Planning, Control and			
	Financing	3		3
BP 341	Small Business Personnel			
	Management	3		3
		<hr/>	<hr/>	
		15		15

**SEMESTER 4**

NE 200	Economics 2	3	3
BP 342	Small Business Practicum	3	3
BP 343	Small Business Seminar	3	3
	Business Department Elective (Note 4)	3	3
	Elective: General	3	3
		<hr/>	<hr/>
		15	15

NOTE (4) Any Business Department course except those introductory business courses in the 100 series.

Upon successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Business Administration-Management** will be awarded.

## MARKETING

In recent years, Marketing has become an increasingly important activity within our society and, in particular, in New England where there is a growing emphasis on the providing of services. Marketing is a broad field which includes defining and creating a market for a product, gauging and meeting customer wants and needs, advertising, sales, retailing, fashion and merchandising and related areas. Essentially, the study of marketing relates to the performance of business activities that direct the flow of goods and services from producers to consumers.

### Senior Year Courses

#### SEMESTER 3

No.	Course Title	Class	Lab	Credits
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
BB 310	Business Law 1	3		3
BI 310	Retailing	3		3
BI 311	Advertising & Promotion	3		3
		15		15

#### SEMESTER 4

NE 200	Economics 2	3		3
BB 410	Business Law 2	3		3
BI 411	Sales & Sales Mgmt. (or)			
BI 412	Merchandising	3		3
BI 410	Consumer Behavior	3		3
	Elective: General	3		3
		15		15

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Business Administration-Marketing** will be awarded.

## GENERAL BUSINESS

The General Business program allows students maximum flexibility in choosing Business Department electives covering the Accounting, Finance, Management and Marketing areas. The students receive a general overview and broad background in business subjects. This program may

be preferred by those unable to decide on a major after completing the Freshman core business program (described previously) or by those contemplating transfer to a four-year college who want the flexibility of choosing business electives for a particular institution.

### Senior Year Courses

#### SEMESTER 3

No.	Course Title	Class	Lab	Credits
NE 100	Economics	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
BB 310	Business Law 1	3		3
	Business Dept. Elective (Note 5)	3		3
	Business Dept. Elective (Note 5)	3		3
		<hr/>		<hr/>
		15		15

#### SEMESTER 4

NE 200	Economics 2	3		3
BB 410	Business Law 2 (Note 6)	3		3
	Business Dept. Elective (Note 5)	3		3
	Business Dept. Elective (Note 5)	3		3
	Elective: General	3		3
		<hr/>		<hr/>
		15		15

NOTE (5) Any Business Department course, except those introductory business courses in the 100 series.

NOTE (6) Students enrolled in the Division of Continuing Education who are concentrating in the specialized areas of Insurance, or Real Estate could substitute BB 411 Insurance Law or BB 413 Real Estate Law.

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Business Administration** will be awarded.

#### GENERAL BUSINESS/TRANSFER COMPACT OPTION\*

While any of the previously mentioned programs could be used for transfer, the General Business/Transfer Compact program has been designed to meet the transfer requirements of four-year *Public* colleges or universities that are members of the Commonwealth Transfer Compact.

This program may be preferred by those wishing a greater mix of liberal arts; math and science courses. A total of 33 credits of such courses are required as compared to 21 to 24 credits in the other six (6) programs mentioned previously. In addition, if you desire to transfer to a *Public State College or University* that requires its incoming juniors to meet the transfer compact, then you should consider following this program.

\*Please note that this program is a specially designed transfer program and not meant to be for transfer students. You should consult with your advisor or the college's transfer counselor to decide which of the seven programs would best meet your transfer needs.

### Senior Year Courses

#### SEMESTER 3

No.	Course Title	Class	Lab	Credits
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
MM 142	Math Statistics (or)			
	Laboratory Science	3	2	4
	Humanities Elective (Note 7)	3		3
	Business Dept. Elective (Note 8)	3		3
		15	2	16

#### SEMESTER 4

NE 200	Economics 2	3		3
	Humanities Elective (Note 7)	3		3
	Humanities Elective (Note 7)	3		3
	Business Dept. Elective (Note 8)	3		3
	Business Dept. Elective (Note 8) or General Elective	3		3
		15		15

NOTE (7) Humanities electives must be selected from art, College theatre, foreign language, music, philosophy and literature. The appropriate humanities for you would depend upon the public college to which you are planning on transferring. (Please discuss with your Advisor or the College's Transfer Counselor).

NOTE (8) Any Business Department course except those introductory business courses in the 100 series. The Business Department electives or general elective must be selected with care depending again on the public college to which you are planning on transferring. (Please discuss with your Advisor or College's Transfer Counselor). Students planning to transfer to UMass should consider taking BA 312 Managerial Accounting and BB 310 Business Law 1. Students planning to transfer to Westfield State should consider taking BF 411 Managerial Finance and BK 411 Production Management.

Upon successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Business Administration** will be awarded.



**CERTIFICATE IN BUSINESS ADMINISTRATION**

**(One Year Program)\***

- Small Business Management
- Administrative Bookkeeping

\*These programs are offered through the Division of Continuing Education and upon successful completion, graduates are awarded a **Certificate** by **Springfield Technical Community College**.

Two-semester programs leading to a Certificate can be extremely valuable to persons who do not have the time or the inclination to undertake a full two-year program, or who graduated from a two-year program, and plan to enter fields requiring business skills.

With business today calling more and more for trained individuals with specific skills, certificate-level programs are well suited to fill the following needs.

—*Small Business Management*: Individuals who are operating or planning to open small firms of their own will find that the Small Business Management certificate is a particularly worthwhile and valuable course of study.

—*Administrative Bookkeeping*: Individuals who are looking for a career where regional manpower studies indicate a high demand will find that the Administrative Bookkeeping program is a challenging and interesting course of study.

**Small Business Management Certificate**

**SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
BA 110	Accounting 1	5		4
BP 112	Small Bus. Marketing and Research	3		3
BP 341	Small Bus. Personnel Management	3		3
BB 412	Small Business Law and Insurance	3		3
		17		16

**SEMESTER 2**

LE 200	Comp. 2: Intro. to Lit.	3		3
BA 314	Small Bus. Planning Control and Financing	3		3
BP 343	Small Bus. Seminar	3		3
	Business Dept. Elective (Note 9)	3		3
		12		12

NOTE (9) Any Business Department course except those introductory business courses in the 100 series.

**Administrative Bookkeeping Certificate****SEMESTER 1**

No.	Course Title	Class	Lab	Credits
BP 101	Office Accounting 1	5		3
MM 143	Business Statistics	3		3
BZ 101	Typewriting 1	3		3
LE 201	Business English	3		3
BP 112	Small Bus. Marketing	3		3
		<hr/>		
		17		15

**SEMESTER 2**

BP 202	Office Accounting 2	5		3
BP 341	Small Bus. Personnel Management	3		3
BD 101	Computer Concepts	3	2	4
BK 419	Office Mgt. & Control	3		3
		<hr/>		
		14	2	13

## Computer Information Systems/ Data Processing

The Computer Information Systems/Data Processing Department offers a choice of career opportunities for the student due to the variety of Program Languages taught. The curriculum is also structured to prepare the Transfer student for the course of study at the four-year college level. In recent years the utilization of all sizes of computers has extended into every area of business, whether large or small, and into most state and local government agencies. As a result, the need for trained personnel in various areas of computer utilization has increased sharply in the past few years, and is continuing.

The main objectives of the department are to enable the student to develop skills and proficiencies that are essential to the future performance of professional work, whether it is in the classroom or on the job.

There is a range of elective courses available in all program offerings. These electives allow the student and faculty advisor to structure a program consistent with specific interests and future goals of the student.

All candidates for the Associate in Science Degree in Data Processing must complete the curriculum as shown in the catalog at the time of acceptance into the College, whether it be in the Day or Evening program. Prior to

admission into the department, a student must successfully fulfill the requirements for placement in MM100 and LE100, and score a minimum of 375 verbal and 375 math on S.A.T. exams. A minimum grade point average of 2.0 is required in both general and specialized areas for graduation.

In some cases work experience may be recognized for course credit, e.g. Co-Op. Also, challenge exams covering a number of career and general courses, are available at S.T.C.C.

Upon the successful completion of requirements for this program, the degree of **Associate in Science in Data Processing** will be awarded.

**SEMESTER 1**

No.	Course Title	Class	Lab	Credits
BA 110	Accounting I	5		4
BD 101	Computer Concepts	3	2	4
BZ 100	Keyboarding Skills (Note 1)	1		1
LE 100	English Comp 1	3		3
	Math Elective (Note 2)	3		3
		15	2	15

**SEMESTER 2**

BA 210	Accounting 2	5		4
BD 102	RPG 2 & 3	3	2	4
BD 302	Structured COBOL	3	2	4
	Math Elective (See Note 2)	3		3
		14	4	15

**SEMESTER 3**

BD 202	Advanced RPG 2 & 3	3	2	4
BD 402	Advanced Structured COBOL	3	2	4
BD 210	Systems Analysis & Design I	3		3
	Business Elective	3		3
	General Elective	3		3
		15	4	17

**SEMESTER 4**

BD 305	Assembler Language	3	2	4
BD 312	Oper Sys & Database	3	2	4
BD 410	Systems Analysis & Design 2	1	4	3
	CIS Elective (Note 3)	3	2	4
		10	10	15

NOTE 1 This course is not required of students who can demonstrate a proficiency in Typing or may be replaced by BZ101 Typing I.

## COMPUTER INFORMATION SYSTEMS

NOTE 2 Degree Candidates are required to have 6 credits of Math, all higher than level MM100. MM120 Contemporary Math is recommended followed by MM143 Business Statistics or MM122 Finite Math. Students planning to transfer to four-year colleges should take MM122 & MM222 Finite Math.

NOTE 3 CIS electives are:

\*BD105 PASCAL

BD107 BASIC

\*BD205 Adv. PASCAL

BD300 Microcomputer APPL

\*BD 306 FORTRAN

BD405 Advanced Assembler

\*Recommended for transfer students.

### CERTIFICATE IN DATA ENTRY/WORD PROCESSING (One Year Program)

The Certificate program in Data Entry/Word Processing will teach the student to use the latest equipment available for the preparation of documents which need to be mass-produced, such as form letters, documents which must be edited from time to time to keep them current, and documents which must be kept on file and be easily reproduced. The necessary edit procedures for a Computer System or an independent Word Processing System will be emphasized.

The Data Entry portion of the course of study will train the student in the concepts of transcribing information from source documents (sales slips, invoices, etc.) into computer files. The hands on assignments given will be checked for speed and accuracy.

This Certificate will prepare the student to perform these tasks and enable him to accept a position which requires the skills of Word Processing or Data Entry.

Upon the successful completion of the requirements for this program, a **Certificate** from **Springfield Technical Community College** will be awarded.

#### SEMESTER 1

No.	Course Title	Class	Lab	Credits
BD 101	Computer Concepts	3	2	4
BZ 100	Keyboarding Skills	1		1
LE 100	English Composition 1	3		3
NP 109	Human Relations at Work	3		3
MM 100	Math	3		3
		13	2	14



**SEMESTER 2**

BD 111	Data Entry Skills	1	2	2
BZ 105	Word Processing Editing	3		3
BZ 200	Keyboard Skill Building	1		1
BZ 205	Word Processing Concepts	1		1
BZ 305	Word Processing Technology 1	1	3	3
LE 200	English Composition 2 (or)			
	Elective	3		3
		<hr/>	<hr/>	<hr/>
		10	5	13

## Office Systems/Secretarial Sciences

The *Office Systems/Secretarial Sciences Department* at STCC offers some of the most exciting programs on campus because of the rapidly changing field its curriculum covers. The modern office is being revolutionized by highly sophisticated electronic technology, and the traditional secretarial job is becoming a thing of the past. The "Office of the Future" has already arrived, bringing with it integrated office systems. The severe national shortage of office personnel and the rapid technological advances in office automation make this department an excellent starting point for a career with continually increasing mobility and earning potential in one of today's fastest-growing occupational fields.

The *Office Systems/Secretarial Sciences Department* offers several specialized degree programs. Men and women entering and/or re-entering the business world receive extensive training within each specialty, with special emphasis on word/information processing technology. Office administration/secretarial majors may choose to study an intensive shorthand degree program or an intensive information processing, non-shorthand program. Programs are as follows:

The *Clerical Office Assistant Program* is a one-year certificate program that prepares the graduate for basic office responsibilities. Emphasis is on typing, filing, and machine transcription. A perfect starting program for the student with undefined career goals! Most credits can transfer into the executive degree program.

The *Executive Office Administration/Executive Secretarial Program* prepares the graduate for top-level positions in secretarial office administration. Students may choose the sophisticated shorthand-based program of

study or the non-shorthand options; i.e., the *Executive Word Processing Option* (emphasizing training in data processing, advanced word processing, speech, and management), and the *Executive Office Administration Bilingual Word Processing Option* (emphasizing language study in addition to those courses just enumerated). Perfect programs for the student seeking executive-level secretarial positions with wide open career pathing!

The *Legal Office Administration/Legal Secretarial Program* prepares the graduate for the very specialized atmosphere and demands of the law office, political office, clerk's office, judge's office or corporate law departments. Essentially the program is structured to teach the student to be a professional legal/administrative assistant with the skills, specialized knowledge, human characteristics, and above-average capabilities of this profession.

A non-shorthand Word Processing Option is available. Perfect for the highly motivated individual seeking variety and challenge in a very prestigious and exciting field!

The *Medical Office Administration/Medical Secretarial Program* prepares the graduate specifically for the field of medical office administration—the non-clinical professional with an extensive medical background performing executive-level functions in such places as hospitals, medical centers, research centers, pharmaceutical and medical publishing houses, large corporations, and other business offices requiring a skilled and knowledgeable medical secretary. Perfect for the medically-minded individual desiring non-clinical employment in the fascinating, challenging, and highly specialized field of medicine!

The *Word Processing Management Program* prepares the graduate to assume entry-level management positions in today's word/information processing business environment. Specific courses in data processing, word/information processing, management, supervision, and communications prepare the graduate to both operate and supervise information systems. Perfect for the management-oriented, career-oriented man and woman!

The *Office Systems/Secretarial Sciences Department* offers students the most up-to-date programs through its active memberships in the Association of Information Systems Professionals, the Professional Secretaries Association, International (Faculty CPS advises campus chapter), the National Association of Legal Secretaries, International (also sponsors a campus chapter), and the Massachusetts Shorthand Reporters Association (CSR advises students), and ongoing workshops and seminars with the professional business community.

**Minimum Grade Requirement:** Students enrolled in the Office Systems/Secretarial Sciences Department are required to achieve a "C" (73%) or better as a final grade in specified departmental offerings. A minimum quality point average of 2.0 is required in order to be eligible for graduation.

**Minimum Speed Requirements:** All students are required to achieve the minimum "Speed Requirements" in all departmental offerings.

**Minimum Standards:** All third and fourth semester students are required to achieve the minimum "Mailability Standards" in all departmental offerings.

**Cooperative Education:** Cooperative Education is available to eligible seniors who wish to enhance their education with work experience. CoOp work must follow the guidelines of the Department and the Cooperative Education Office.

**CLERICAL OFFICE ASSISTANT (1 year)**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
LE 203	Fundamentals of Speech	3		3
BO 103	Office Asst. Procedures	2		2
BZ 101	Typewriting 1	2	3	3
BZ 105	Word Processing Editing	3		3
BZ 113	Records Management	1		1
MM 100	Mathematics 071-073 (Note 1)	3		3
		17	3	18

**SEMESTER 2**

LE 201	Business English	3		3
BO 204	Intro to Machine Trans.	3		3
BZ 201	Typewriting 2	2	3	3
BZ 240	Business Calc. Machines	1		1
	Elective (Note 2)	3		3
MM 130	Business Math	3		3
BZ 103	Personal Use WP	1		1
		16	3	17

NOTE (1): Only if Placement indicates need

NOTE (2): RECOMMENDED ADDITIONAL ELECTIVES:

No.	Course Title
BB 301	Business Law 1
BD 101	Computer Concepts
BZ 205	Word Processing Concepts
BZ 200	Keyboard Skill Building

Upon the successful completion of requirements of this program, a **Certificate in Clerical Office Assistant** will be awarded.

**EXECUTIVE OFFICE ADMINISTRATION/EXECUTIVE SECRETARIAL****SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology	3		3
BZ 101	Typewriting 1	2	3	3
BZ 102	Shorthand for the Electronic Office 1 (or)			
BZ 112	Skill Building	3	2	4
		14	5	16

# OFFICE SYSTEMS

## SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
NP 100	General Psychology	3		3
BZ 105	Word Processing Editing	3		3
BZ 201	Typewriting 2	2	3	3
BZ 202	Shorthand for the Electronic Office 2	3	2	4
	Elective (Note 1)	1		1
		15	5	17

## SEMESTER 3

BE 301	Executive Typewriting	2	3	3
BE 303	Executive Office Practice	2		2
BB 310	Business Law 1	3		3
BP 101	College Accounting 1 (Note 2)	3		3
BZ 302	Shorthand Speed Building	1	1	1
	Elective (Note 1)	1		1
BZ 305	Word Processing Tech. 1	1	3	3
		13	7	16

## SEMESTER 4

LE 201	Business English	3		3
BE 402	Exec/Tech Dict. & Trans.	4	4	6
BZ 304	Mach. Transcription	3		3
	Elective (Note 1)	1		1
	Elective (Note 3)	1	3	3
		12	7	16

Note (1) Elective: CHOOSE 1

BZ 205	W.P. Concepts		Other Rec. Electives
BZ 240	Bus. Cal. Mach.	BK 110	Princ. of Mgmt.
BZ 113	Records Management	BZ 200	Keyboard Skill Building

Note (2) OR BA 110 Accounting 1

Note (3) Elective: CHOOSE 1

BZ 415	Word Proc. Tech. II
BZ 416	Adv. WP Appl.
BZ 405	Info. Proc. Off. Mgmt.
BD 101	Computer Concepts
BE 497	Cooperative Education

Upon the successful completion of requirements for this program, the degree of **Associate In Science in Secretarial Science-Executive** will be awarded.



# **EXECUTIVE OFFICE ADMINISTRATION/EXECUTIVE SECRETARIAL WORD PROCESSING OPTION**

## **SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology	3		3
BD 101	Computer Concepts	3	2	4
BZ 101	Typewriting 1	2	3	3
		14	5	16

## **SEMESTER 2**

LE 200	Comp. 2: Intro. to Lit.	3		3
NP 100	General Psychology	3		3
BK 110	Princ. of Management	3		3
BZ 105	Word Processing Editing	3		3
BZ 201	Typewriting 2	2	3	3
	Elective*	1		1
		15	3	16

## **SEMESTER 3**

BE 301	Executive Typewriting	2	3	3
BE 303	Executive Office Practice	2		2
BP 101	College Accounting 1**	3		3
BZ 205	Word Process. Concepts	1		1
BZ 304	Machine Transcription	3		3
BZ 305	Word Processing Tech. 1	1	3	3
	Elective*	1		1
		13	6	16

## **SEMESTER 4**

LE 201	Business English	3		3
LE 203	Fundamentals of Speech	3		3
BB 310	Business Law 1	3		3
BZ 405	Info. Proc. Office Mgmt.	3		3
BZ 415	Word Processing Tech. 2***	1	3	3
		13	3	15

\* *Elective: (Choose 1)*

BZ 240 Bus. Cal. Machines  
BZ 113 Records Management

\*\*Or BA 110 Acct. 1

\*\*\*Or Cooperative Education

## OFFICE SYSTEMS

Upon the successful completion of requirements for this program, the degree of **Associate In Science In Secretarial Science-Executive** will be awarded.

### EXECUTIVE OFFICE ADMINISTRATION/EXECUTIVE SECRETARIAL BILINGUAL WORD PROCESSING OPTION

#### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
LF 079	Bas. Stud. Skills in Span.	3		3
LF 321	Intermediate Spanish 1	3		3
BZ 101	Typewriting 1	2	3	3
BZ 240	Bus. Calculating Mach.	1		1
MM 071-073	Mathematics	3		3
		15	3	16

#### SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
LF 421	Intermediate Spanish 2	3		3
NP 100	General Psychology	3		3
BD 101	Computer Concepts	3	2	4
BZ 201	Typewriting 2	2	3	3
MM 130	Business Mathematics	3		3
		17	5	19

#### SEMESTER 3

BE 301	Executive Typewriting	2	3	3
BE 303	Executive Office Practice	2		2
BO 204	Intr. to Machine Trans.	3		3
BP 101	College Accounting 1	3		3
BZ 105	Word Processing Editing	3		3
BZ 205	Word Processing Concepts	1		1
BZ 305	Word Proc. Technology 1	1	3	3
		15	6	18

#### SEMESTER 4

LE 201	Business English	3		3
LE 203	Fundamentals of Speech	3		3
BZ 113	Records Management	1		1
BZ 304	Machine Transcription	3		3
BZ 405	Info. Proc. Office Mgmt.	3		3
BZ 415	Word Processing Tech. 2	1	3	3
		14	3	16

**RECOMMENDED ELECTIVES:**

BK 110 Principles of Management

BZ 200 Keyboard Skill Building

Upon the successful completion of requirements for this program, the degree of **Associate in Science in Secretarial Science-Executive** will be awarded.

**LEGAL OFFICE ADMINISTRATION/LEGAL SECRETARIAL****SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology	3		3
BZ 101	Typewriting 1	2	3	3
BZ 102	Shorthand for the Electronic Office 1 (or)			
BZ 112	Skill Building	3	2	4
		14	5	16

**SEMESTER 2**

LE 200	Comp. 2: Intro. to Lit.	3		3
NP 100	General Psychology	3		3
BZ 105	Word Processing Editing	3		3
BZ 201	Typewriting 2	2	3	3
BZ 202	Shorthand for the Electronic Office 2	3	2	4
	Elective (Note 1)	1		1
		15	5	17

**SEMESTER 3**

BL 301	Legal Typewriting	2	3	3
BL 302	Legal Shorthand Term.	1		1
BL 303	Legal Office Practice	2		2
BB 310	Business Law 1	3		3
BP 101	College Accounting 1 (Note 2)	3		3
BZ 302	Shorthand Speed Building	1	1	1
	Elective (Note 1)	1		1
BZ 305	WP Tech I	1	3	3
		14	7	17

**SEMESTER 4**

LE 201	Business English	3		3
BL 402	Legal Dictation & Trans.	4	4	6
BZ 304	Machine Transcription	3		3
	Elective (Note 1)	1		1
	Elective (Note 3)	1	3	3
		12	7	16

# OFFICE SYSTEMS

Note (1) *ELECTIVE; CHOOSE 1*

BZ 205 Word Proc. Concepts  
BZ 240 Bus. Calc. Machines  
BZ 113 Records Management

Note (2) Or BA 110 Accounting 1

Note (3) Elective: CHOOSE 1

BZ 415 WP Tech II  
BZ 405 Info. Proc. Off. Mgmt.  
BL 497 Cooperative Education  
BZ 416 Advanced Word Proc. Appl.  
BD 101 Computer Concepts

## RECOMMENDED ADDITIONAL ELECTIVES

BK 110 Prin. of Management  
BB 410 Business Law 2  
NI 100 Am Govt. & Politics  
BZ 200 Keyboard Skill Building  
NL 110 Intro. to Criminal Ev. 1  
NL 100 Criminal Procedures

Upon the successful completion of requirements for this program, the degree of **Associate in Science in Secretarial Science-Legal** will be awarded.

## LEGAL OFFICE ADMINISTRATION/LEGAL SECRETARIAL WORD PROCESSING OPTION

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology	3		3
BD 101	Computer Concepts	3	2	4
BZ 101	Typewriting 1	2	3	3
		14	5	16

### SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
NP 100	General Psychology	3		3
BK 110	Principles of Mgmt.	3		4
BZ 105	Word Processing Editing	3		3
BZ 201	Typewriting 2	2	3	3
	Elective*	1		1
		15	3	17

### SEMESTER 3

BL 301	Legal Typewriting	2	3	3
BL 303	Legal Office Practice	2		2
BP 101	College Accounting**	3		3
BZ 205	Word Proc. Concepts	1		1
BZ 304	Machine Transcription	3		3
BZ 305	Word Processing Tech. 1	1	3	3
	Elective*	1		1
		13	6	16



**SEMESTER 4**

LE 201	Business English	3		3
LE 203	Fundamentals of Speech	3		3
BB 310	Business Law 1	3		3
BZ 405	Info. Proc. Office Mgmt.	3		3
BZ 415	Word Proc. Tech. 2***	1	3	3
		<hr/>	<hr/>	<hr/>
		13	3	15

**\*ELECTIVES; CHOOSE 1**

BZ 240 Bus. Cal. Machines  
 BZ 113 Records Management  
 BZ 200 Keyboard Skill Building

\*\*Or BA 110 Accounting 1

\*\*\* Or Cooperative Education

Upon the successful completion of requirements for this program, the degree of **Associate in Science in Secretarial Science-Legal** will be awarded.

**MEDICAL OFFICE ADMINISTRATION/MEDICAL SECRETARIAL****SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
BD 101	Computer Concepts	3	2	4
BZ 101	Typewriting 1	2	3	3
BZ 240	Bus. Calculating Mach.	1		1
AA 101	Medical Terminology 1	3		3
AA 102	Health Science & the Law	3		3
MB 104	Human Biology	3	2	4
		<hr/>	<hr/>	<hr/>
		18	7	21

**SEMESTER 2**

LE 200	Comp. 2: Intro. to Lit.	3		3
BM 303	Medical Office Practice	2	1	2
BP 103	Medical Office Acct.	3		3
BZ 201	Typewriting 2	2	3	3
AA 201	Medical Terminology 2	3		3
MB 204	Human Biology 2	3	2	4
		<hr/>	<hr/>	<hr/>
		16	6	18

# OFFICE SYSTEMS

## SEMESTER 3

NP 100	General Psychology	3		3
BM 301	Medical Typewriting	3	2	3
BB 310	Business Law 1	3		3
BZ 105	Word Processing Editing	3		3
BZ 113	Records Management	1		1
BZ 205	Word Proc. Concepts	1		1
BZ 305	Word Proc. Technology 1	1	3	3
		<hr/>	<hr/>	<hr/>
		15	5	17

## SEMESTER 4

LE 201	Business English	3		3
BM 454	Medical Machine Trans.	3		3
BK 110	Principles of Mgmt.	3		3
BZ 405	Info. Proc. Office Mgmt.	3		3
BZ 415	Word Processing Tech. 2	1	3	3
	Elective	3		3
		<hr/>	<hr/>	<hr/>
		16	3	18

## RECOMMENDED ELECTIVES:

LF 120	Cultural Spanish
BZ 200	Keyboard Skill Building
BM 497	Cooperative Education

Upon the successful completion of requirements for this program, the degree of **Associate in Science in Secretarial Science-Medical** will be awarded.

## WORD PROCESSING MANAGEMENT

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
NP 100	General Psychology	3		3
BD 101	Computer Concepts	3	2	4
BZ 101	Typewriting 1	2	3	3
BZ 113	Records Management	1		1
MM 100	Mathematics 091-093	3		3
		<hr/>	<hr/>	<hr/>
		15	5	17

### SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
BZ 105	Word Processing Editing	3		3
BZ 201	Typewriting 2	2	3	3
BZ 205	Word Process. Concepts	1		1
NP 409	Industrial Psychology (or)			
NP 109	Human Relations at Work	3		3
MM 143	Business Statistics	3		3
		<hr/>	<hr/>	<hr/>
		15	3	16

**SEMESTER 3**

LE 203	Fundamentals of Speech	3		3
BA 110	Accounting 1	5		4
BB 310	Business Law 1	3		3
BK 110	Principles of Mgmt.	3		3
BZ 304	Machine Dict. & Trans.	3		3
BZ 305	Word Processing Tech. 1	1	3	3
		<hr/>	<hr/>	<hr/>
		18	3	19

**SEMESTER 4**

NE 100	Economics 1	3		3
BP 415	Word Process. Practicum		6	4
BZ 405	Info. Proc. Office Mgmt.	3		3
BZ 416	Adv. WP Applications	1	3	3
LE 202	Technical Report Writing	3		3
		<hr/>	<hr/>	<hr/>
		10	9	16

**RECOMMENDED ELECTIVES:**

- BZ 415 Word Processing Technology 2  
 BD 102 Computer Programming-RPG

Upon the successful completion of requirements for this program, the degree of **Associate in Science in Word Processing Management** will be awarded.

# Liberal Arts and Sciences





## Early Childhood Education

This course of study is designed to meet the ever-expanding needs for trained personnel in the field of early learning and child care. It provides both general education studies and specific skills gained through class and laboratory experiences.

Graduates of the two-year program will be prepared to assist teachers and other professionals in non-public, early environments such as infant care centers, family day care homes, group day care centers, nursery schools, private kindergartens, health care agencies, institutions and other schools and organizations offering early learning programs and/or child care services. The trained assistant will play an important role as a supportive member of the professional team involved in the daily care, development and education of the young child.

Applicants for admission to this program must be high school graduates or equivalent. A personal interview is required as part of the application process and the SAT's must be taken. Early Childhood students must earn a 2.0 quality point average (C) for each major course offering within the program. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Early Childhood Education** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MB 100	Natural History	3	2	4
NC 100	Introduction to Early Childhood Education	3		3
NC 110	Child Growth & Develop.	3		3
NC 120	Early Child. Field Work 1		3	1
NP 100	General Psychology	3		3
		15	5	17

### SEMESTER 2

LE 200	Comp 2: Intro. to Lit.	3		3
LM 134	Music for Early Child. Education	3		3
NC 210	Theories of Learn. & Personality Development	3		3
NC 200	Curriculum for Open Ed.	3	3	4
NC 220	Early Child. Field Work 2		6	2
NS 100	Intro. to Sociology	3		3
		15	9	18

**SEMESTER 3**

LA 148	Early Child. Art Ed.	3		3
NS 200	Social Problems (or)			
NP 400	Prin. of Abnor/Normal Behavior	3		3
NC 310	Survey of Curr. Early Learn. Programs	3		3
NC 300	Curriculum for Open Ed. 2	3	3	4
NC 315	Obser. & Recording of Child Behavior Seminar	1		1
NC 320	Obser. & Recording Field Study		9	3
		<hr/>	<hr/>	<hr/>
		13	12	17

**SEMESTER 4**

NC 400	Supervised Student Pract.		18	6
NC 420	Seminar and Critique	3		3
NC 450	Child Health, Nutrition & Safety	3		3
LE 203	Fund. of Speech	3		3
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		9	18	15

## General Studies

The General Studies Program prepares students who:

- wish to earn an Associate in Arts degree and qualify for transfer to a four-year college. Since the graduation requirements include nine general electives, special concentrations are possible, as for example in art, biology and general business.;
- have made a career decision, but must complete prerequisites for a specific program, improve skills measured by SAT examinations, or generally confirm their commitment to a particular field;
- are undecided about career objectives and seek an exploratory period leading either to a transfer program or an occupational curriculum.
- need to develop English language skills in order to work successfully in a given program.

Therefore, in order to reflect these student priorities and meet academic needs effectively, General Studies offers core options as follows:

Core 1 - *Transfer*: for the student electing a degree program;

Core 2 - *Pre-Health*: for the student contemplating an application to a program in the fields of Health or Nursing;

Core 3 - *Pre-Technology*: for the student contemplating an application to a program in the Division of Technologies;

Core 4 - *Pre-Engineering and Science Transfer*: for the student who wishes to major in Science or prepare for the Engineering Transfer program of the College;

- Core 5 - *Pre-Business or Service*: for the student who plans an application to a program in Business, Computer Information Systems, Office Systems, Cosmetology, Early Childhood Education, or Law Enforcement;
- Core 6 - *Bilingual Program*: for students who need to develop English language skills, an intensive and accelerated curriculum in English as a Second Language as well as transitional courses in mathematics and biology, with related counseling and support services.
- Core 7 - *One Semester Students*: Advisor assignment as appropriate (See Below).

The student's intended major or stated program choice will determine the applicable core within the department.

### *Placement Testing*

Both transfer and career programs require effective reading comprehension and English skills as well as a foundation in mathematics and science. Therefore, course assignments in these areas are based on the student's performance in a series of placement examinations taken after acceptance, but prior to scheduling and registration. Placement tests in mathematics, English, vocabulary development and reading comprehension are required of all entering students. It must be noted that, as prerequisites for college-level work, some courses may be required that are not applicable to the General Studies Degree.

### *Academic Advising*

Faculty advisors assist the student in making course selections, registering for courses, pursuing program objectives, and completing graduation requirements.

A *GS Student Information Booklet* is issued to entering students for their guidance. Published yearly, the booklet summarizes pertinent information about department procedures and serves as the student's personal record of courses completed towards a degree.

It is the student's responsibility to seek out information required and act upon it. The catalog and the General Studies Student Information Booklet constitute the official policy of the program in matters of graduation or transfer.

In summary, the General Studies Program involves the student in a broad range of subjects from the major academic areas; through the nine general electives allowed for the degree, its students are encouraged to explore career programs through electives in Business, Technologies, Health and Human Services. Developmental courses are available and may be required as prerequisites for English-speaking and Non-English speaking students alike, based on test performance.

Minimum requirements for the degree of Associate in Arts in Liberal Arts/General Studies:

### *English/Communications:*

English Composition 1

3 credits

ONE of the following:

Business English

English Composition 2

## GENERAL STUDIES

Journalism	
Speech	
Technical Report Writing	3 credits
<i>Mathematics/Sciences:</i>	
ONE college-level, transferable course in Mathematics	3 credits
ONE college-level, transferable course in the Sciences	4 credits
ONE college-level, transferable course in either Mathematics or Science	3 or 4 credits
<i>Behavioral/Social Sciences:</i>	
Introduction to Sociology (NS 100)	3 credits
General Psychology (NP 100)	3 credits
ONE of the following:	
Economics 1	
History or Political Science or	
Cultural Anthropology Elective	3 credits
<i>Humanities/Fine Arts:</i>	
TWO courses selected from:	
Art	
College Theatre	
Foreign Language	
Music	
Philosophy	6 credits
ONE Literature Elective	3 credits
<i>General Electives:</i>	
NINE college-level, non-developmental courses selected from the humanities, technologies, health sciences, mathematics, natural or social sciences	27 credits

### TOTAL OF 60 CREDITS REQUIRED

### RECOMMENDED COURSE SEQUENCE

The following sequence is recommended; however, additional semesters may be required for students whose placement scores and/or high school background indicate a need to complete prerequisites for specific college-level courses.

#### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
	Elective: General	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
	Elective: Math (See Note 1)	3		3
	Elective (Humanities): Art, Drama, Foreign Language, Music, or Philosophy	3		3
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		15		15



**SEMESTER 2**

	Elective: Eng. Comm. (See Note 2)	3	3
	Elective: Sci. or Math (See Note 3)	3	3
NP 100	General Psychology or		
NS 100	Intro. to Sociology	3	3
	Elective (Humanities): Art, Drama, Foreign Language, Music, or Philosophy)	3	3
	Elective: General	3	3
		<hr/>	<hr/>
		15	15

**SEMESTER 3**

	Elective: Literature	3	3
	Elective: (Hist., Econ., or Pol. Sci.)	3	3
	Elective: Science or Math (See Note 3)	3	
	Elective	3	3
	Elective	3	3
		<hr/>	<hr/>
		15	15

**SEMESTER 4**

	Elective	3	3
	Elective	3	3
	Elective	3	3
	Elective	3	3
	Elective	3	3
		<hr/>	<hr/>
		15	15

(1) Select from MM 120, MM 121, or MM 101 - MM 103.

(2) Select from LE 200, LE 201, LE 202, or LE 203

(3) One College-level science is required for graduation.

NOTE: All courses presented for degree must be non-developmental and college-level to total 60 semester hours.

This is the recommended course sequence for students meeting General Studies degree requirements.

Students in Pre-Health, Pre-Technology, Pre-Engineering, or Pre-Service courses will find recommended priorities in the General Studies Information Booklet and should consult with their faculty advisor.

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Arts in Liberal Arts (General Studies)** will be awarded.

**DEVELOPMENTAL COURSES AVAILABLE**

For students in need of developmental studies, the following courses are available and sometimes required as prerequisites for college-level work; however, they cannot be applied as graduation or transfer credit.

LD 091-093	Reading Comprehension & Vocabulary Development Modules
LD 099	Communication Skills 1
LD 011-013	English as a Second Language I, II, III
LD 080	Study Skills (taught in Spanish)
LD 089	Basic English Conversational Skills I (Bilingual)
LD 031	Basic English Conversational Skills II (Bilingual)
LD 096	Basic Writing Skills for Bilinguals
LD 027	English Reading & Comprehension 1 (Bilingual)
LD 028	English Reading & Comprehension 2 (Bilingual)
LD 032	English Reading & Comprehension 3 (Bilingual)
MM 071-073	Basic Arithmetic
MM 081-083	Elementary Algebra
MM 091-093	Intermediate Algebra
MP 090	Basic Science I: Introduction to Chemistry
MP 092	Basic Science II: Introduction to Physics
MB 090	Basic Science III: Introduction to Biology

## Law Enforcement/Criminal Justice

A criminal justice program is offered primarily for students desiring to develop a career in Law Enforcement. In addition, students desiring a pre-law school course of study will find the Law Enforcement Program most advantageous as the case method of study is employed wherever possible. There is opportunity for in-service police officers who are desirous of improving their knowledge and abilities through study of specific police science courses and various general education subjects. The objective of this two-year program is to familiarize the student with legal, technical and practical aspects of law enforcement procedures. The ever-increasing crime rate, changing social order, changes in the criminal laws and major court decisions are all factors that have made the law enforcement officer's role one of extreme importance and ever-increasing complexity in modern society. Toward this end, the student will be provided with a strong background in the basic administration of justice as well as a general knowledge of the constitutional safe-guards as afforded in the Bill of Rights. This program also includes study in the social science area and a general choice of electives. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Law Enforcement** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
NS 100	Intro. to Sociology	3		3
NL 100	Criminal Procedures 1	3		3
NL 110	Intro. to Crim. Justice	3		3
	Elective	3		3
		15		15

**SEMESTER 2**

LE 200	Comp. 2: Intro. to Lit.	3	3
NS 200	Social Problems	3	3
NL 200	Criminal Procedures 2	3	3
NL 230	Criminal Evidence	3	3
	Elective	3	3
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		15	15

**SEMESTER 3**

NP 100	General Psychology	3	3
NI 100	Amer. Gov't & Politics	3	3
NL 300	Criminal Law 1	3	3
NL 340	Criminal Investigation	3	3
	Elective	3	3
		<hr/>	<hr/>
		15	15

**SEMESTER 4**

LF 122	Conversational Spanish	3	3
NP 400	Prin. of Normal/Abnormal Behavior	3	3
NL 400	Criminal Law 2	3	3
NL 450	Law Enforcement Mgmt. and Planning	3	3
	Elective	3	3
		<hr/>	<hr/>
		15	15

## Liberal Arts Transfer

The Liberal Arts Transfer curriculum is designed to parallel the first two years of a four year institution's liberal arts program. It is for students who intend to transfer to a senior college and work toward a bachelor's degree. The minimum requirements for the degree are 62 semester hours (20 courses), a minimum cumulative quality point average of 2.0, including 6 credits of English Composition, 15 credits in the Humanities, 15 credits in the Social Sciences, and 14 credits in Mathematics and Natural Sciences. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Arts in Liberal Arts Transfer** will be awarded.

**SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
	Math: MM 101-103; MM 120; MM 122 or Lab Sci.	3		3
	Liberal Arts Elective (Spanish Recommended)*	3		3
	History: Survey of Early Western Civilization or Early US History	3		3
NP 100	General Psychology	3		3
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		15		15

# LIBERAL ARTS TRANSFER

## SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
	History: Survey of Modern Western Civilization or Modern US History	3		3
	Liberal Arts Elective (Spanish Recommended)*	3		3
	Math: MM 105-107, MM 121, MM 222; MM 142 or Lab Science	3		3
NS 100	Intro. to Sociology	3		3
		15		15

## SEMESTER 3

	Literature Elective: English, American, World, or other Literature	3		3
	Laboratory Science	3	3	4
	Liberal Arts Elective (Spanish Recommended)*	3		3
LE 203	Fundamentals of Speech	3		3
NE 100	Economics 1	3		3
		15	3	16

## SEMESTER 4

	Literature Elective: English, American, World, or other Literature	3		3
	Laboratory Science	3	3	4
	Liberal Arts Elective (Spanish Recommended)*	3		3
NI 100	Am. Govt. and Politics or Math or Science Elective	3		3
	Liberal Arts Elective	3		3
		15	3	16

\*Liberal Arts Electives include: Math, Science, Social Sciences, Humanities/Fine Arts.



## Fine Arts Option

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
LA 146	Intro. To Art: Basic Design	3		3
LA 147	Basic Drawing	3		3
	College Level Math	3		3
LE 100	English Composition 1	3		3
NP 100	General Psychology	3		3
		15		15

## SEMESTER 2

LA 142	Painting 1	3		3
LA 149	Drawing Composition	3		3
LE 200	Comp. 2: Intro to Literature	3		3
	Math or Lab Science	3	2	4
LA 143	Printmaking 1	3		3
		15	2	16

## SEMESTER 3

LA 140	Art History: Prehistoric to Gothic	3		3
NS 100	Intro. to Sociology	3		3
LA 242	Painting 2 or Art Elective (Note 3)	3		3
	Elective: Lab Science (Note 1)	3	2	3
	Elective: Literature (Note 2) or Elective: Art (Note 3)	3		3
		15	2	15

## SEMESTER 4

LA 145	Figure Drawing	3		3
LA 240	Art History: Ren. & Baroque	3		3
LA 243	Printmaking 2 or Art Elective (Note 3)	3		3
	Elective: Art (Note 3) or Literature Elective (Note 2)	3		3
	Elective: Social Science	3		3
		15		15

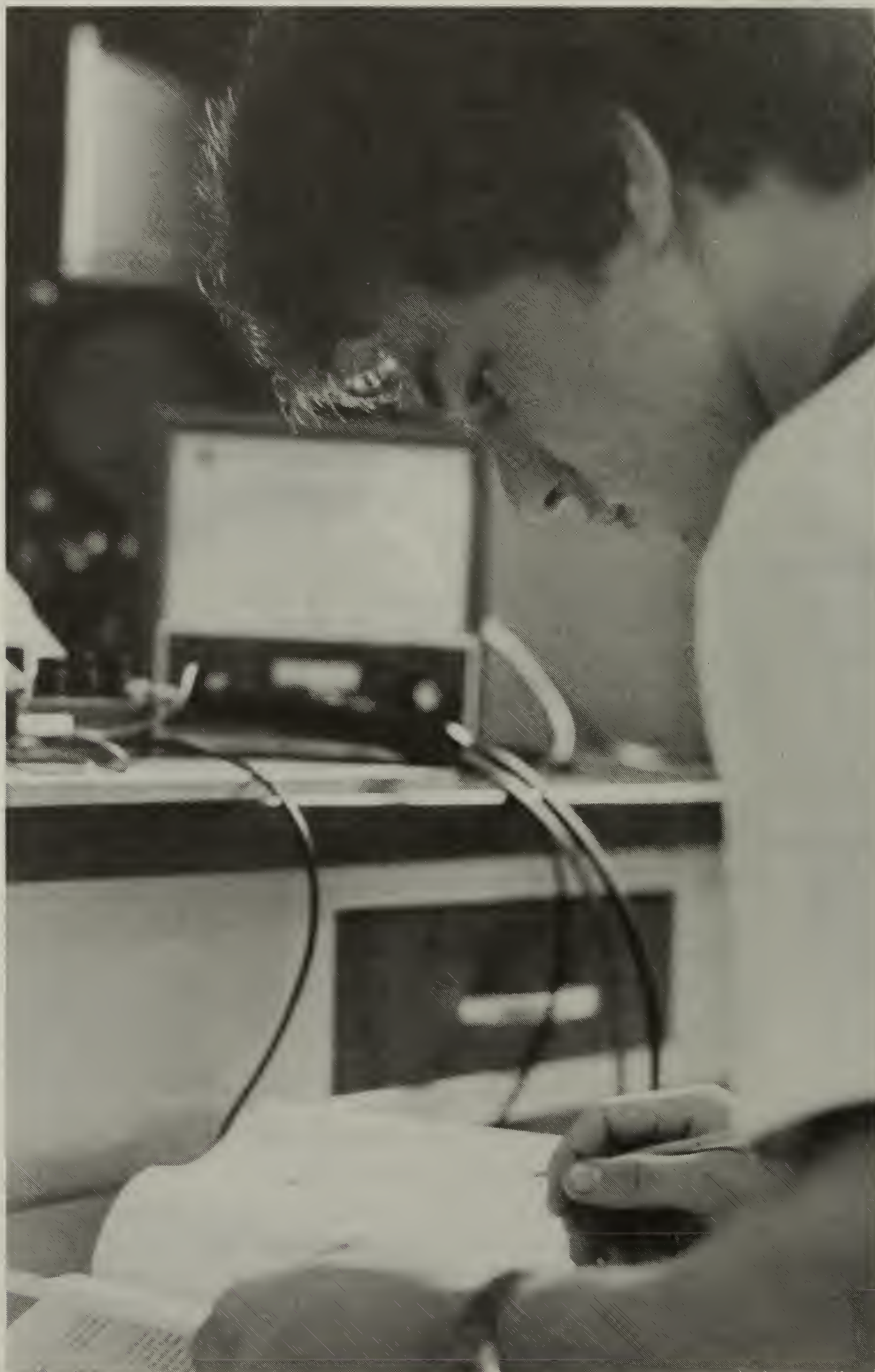
Note (1) MN 100 Computers in Society recommended.

Note (2) LE 305 Children's Literature recommended.

Note (3) Directed Study in Art 1-3; Early Childhood Art Education (Fall only).  
In DCE only: Pottery 1 and 2 and Fine Arts Crafts 1 and 2.

Upon the successful completion of the requirements for this program, the degree of **Associate in Arts in Liberal Arts Transfer** will be awarded.

# Engineering Technologies



## Advanced Metals Machining Technology

The Advanced Metals Machining curriculum is designed for persons with basic machine knowledge and experience. Graduates will likely compete for positions well above starting salaries in the machining field. Given fundamental skills, knowledge, job experience, and a specially designed, broadly-based program, students will receive advanced training for applied skills, technical or supervisory occupations in the metals machine field resulting in higher wages, job advancement and position security while providing increased economic and competitive advantages to employers and the community.

Minimum Grade Requirement: Students in Advanced Metals Machining Technology must receive a grade of "D" or better and an Q.P.A. of 2.0 for graduation. Upon the successful completion of the requirements for this program, as listed below, the degree of **Associate in Science in Advanced Metals Machining Technology** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
FB 130	Blue Print Reading	1	3	2
FA 110	Metal Machining 1	2	9	5
FB 110	Production Processes	3		3
MM 101	Mathematics	1		1
MM 102	Mathematics	1		1
MM 103	Mathematics	1		1
		12	12	16

### SEMESTER 2

LE 202	Tech. Report Writing	3		3
FA 210	Metal Machining 2	2	9	5
FA 320	Work Simplification	3	2	4
	Elective: Social Science	3		3
		11	11	15

### SEMESTER 3

FB 410	Production Control	4		4
FB 320	Strength of Materials	4		4
FA 310	Metal Machining 3	2	9	5
MP 119	Technical Physics	3	3	4
	Elective	3		3
		16	12	20

## SEMESTER 4

FA 420	Specialized Machinery		3	1
FA 410	Metal Machining 4	2	9	5
FB 420	Fluid Power	3	2	4
FB 430	Engineering Economy	3		3
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		8	14	13

## Automotive Technology

The two-year Automotive Technology curriculum consists of practical work experience in engineering, testing, servicing and repairing cars as well as a study of related technical subjects. A knowledge of basic scientific principles and technical information is emphasized so that students can understand why mechanical and technical difficulties occur. Instruction in management and business operations is included in this program to prepare graduates for junior supervisory positions in the automotive field. Major areas to be covered are engines, transmissions, differentials, brakes, carburetors, electronic fuel systems, electrical systems and front-end suspensions. The instructional strategies rely on lectures, demonstrations, overhead projectors, slide films, charts, textbooks and student participation in laboratory assignments. New large quarters accommodate both classroom and shop labs. A separate engine lab is equipped with electronic testing devices, computer front end alignment, and computer wheel balancing equipment, together with a dynamometer lab where vehicles can be run under actual road load conditions and be observed with attached electrical devices. Graduates are prepared for employment as automotive service technicians, salesmen, and managers and many other areas related to the automotive field. Students in the Automotive Technology program must receive a grade of "D" or better. Attendance is a requirement and is taken into consideration. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Automotive Technology** will be awarded.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
NP 109	Human Relations at Work	3		3
IA 110	Gasoline Engine Systems	2	2	3
IA 120	Drive Line & Air. Cond.	2	2	3
FA 130	Machine Tool Techniques		3	1
MM 101	Mathematics	1		1
MM 102	Mathematics	1		1
MM 103	Mathematics	1		1
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		13	7	16



**SEMESTER 2**

LE 200	Comp. 2: Intro. to Lit.	3		3
MC 100	Chemistry 1	3	3	4
IA 210	Gasoline Engines Service	2	2	3
IA 220	Auto. Transmissions	2	2	3
GD 110	Prog. Engr. Graphics Mod. 1		3	1
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		10	10	14

**SEMESTER 3**

MP 119	Technical Physics	3	3	4
NE 100	Economics 1	3		3
BP 101	Office Accounting 1	3		3
IA 310	Fuel & Electric Systems	2	2	3
IA 330	Brakes & Suspension	2	2	3
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		13	7	16

**SEMESTER 4**

MC 300	Automotive Chemistry	3	3	4
LE 202	Technical Report Writing	3		3
BK 421	Small Business Formation	3		3
IA 420	Engine Diag. & Tune-up	2	2	3
IA 430	Adv. Automotive Systems	2	2	3
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		13	7	16

## Bio-Medical Instrumentation Technology

Instrumentation is being used increasingly in medical, biological and research fields. This equipment has become so complex that technicians must have a detailed knowledge of biomedical procedures and biomedical terminology so that proper functioning of the equipment and safety of the patient can be assured. The program provides the general technical knowledge and understanding of the more commonly used bio-medical instruments, components, systems and circuit techniques. Minimum Grade Requirement: Bio-Medical Technology students shall maintain a minimum grade of "C" (2.0) for all departmental courses. A grade of "C" or lower will be considered a poor level of performance in any course. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Bio-Medical Instrumentation Technology** will be awarded.

## BIO-MEDICAL INSTRUMENTATION TECHNOLOGY

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
	Elective: Humanities	3		3
EB 120	Measuring Principles 1	2	3	3
ET 110	Basic Electronics 1	3		3
ET 115	Electronics Lab 1		4	2
MM 101	Mathematics	1		1
MM 102	Mathematics	1		1
MM 103	Mathematics	1		1
MM 231	Engineering Computations	1		1
		15	7	18

### SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
EB 230	Measuring Principles 2	2	3	3
ET 210	Basic Electronics 2	3		3
ET 220	Active Networks 1	3		3
ET 215	Electronics Lab 2		4	2
MC 100	Chemistry 1	3	3	4
		14	10	18

### SEMESTER 3

LE 202	Technical Report Writing (or)			
LE 203	Fundamentals of Speech	3		3
EB 320	Calibration & Standardiz.	1	3	2
EB 340	Electronic Circuits	2	3	3
ET 340	Comp. Architecture and Logic			
	Circuitry	3		3
	Humanities Elective	3		3
ET 350	Electronics Lab 3		4	2
		12	10	16

### SEMESTER 4

EB 410	Bio-Med. Elect. System 392	2	3	3
EB 420	Instrumentation Project		6	2
EB 430	Codes-Laws-Safety	1		1
ED 420	Microprocessor Theory	3		3
MB 136	Applied Physiology	3	3	4
		9	12	13

## Civil Engineering Technology

The Civil Engineering Technology program is designed to provide an engineering background for persons who wish to enter the building and construction industry as engineering technicians, architectural draftsmen, or

as construction managers. Students completing this program should also be able to begin work in the areas of surveying and estimating. The design and construction of residential and light commercial structures are stressed. Certain phases of heavy construction and highway development are also covered. Students planning to enter this program should have interests in mathematics and science. However, creative ability is also required in the design laboratories involved in this program. Minimum Grade Requirement: All departmental courses shall be satisfactorily completed. A satisfactory grade shall be defined as one having a letter grade "D" (63%) or 1.0 Q.P.A.) or above. Any course failed must be repeated before graduation and each course may be repeated only once. The student must achieve an overall Q.P.A. of 2.0 at the completion of the department course of study. In addition, he must remain in good academic standing as outlined below: A.) At the beginning of the second semester, the student must maintain a 1.5 Q.P.A.; B.) At the beginning of the third semester, the student must maintain a 1.7 Q.P.A.; C.) At the beginning of the fourth semester, the student must maintain a 1.9 Q.P.A. Any student not meeting the above academic requirements will be placed on academic probation for one semester. If, at the end of this period, no improvement has taken place to bring the Q.P.A. to the required academic level, the student will be removed from the program. Each student must complete Math Modules MM 101 and MM 102 before he/she will be allowed to enter into any of the Civil Engineering series of courses in the 2nd, 3rd, or 4th semester. Upon the successful completion of the requirements for this program, as listed below, the degree of **Associate in Science in Civil Engineering Technology** will be awarded.

**SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MM 101	Mathematics * *	1		1
MM 102	Mathematics * *	1		1
MM 103	Mathematics * *	1		1
GC 110	Construction Materials	2		2
GC 120	Arch. Design & Spec. 1	2	6	4
GC 130	Const. Methods & Equipment	3		3
MM 231	Engineering Computation	1		1
		14	6	16

**SEMESTER 2**

LE 200	Comp. 2: Intro. to Lit.	3		3
MM 105	Mathematics * *	1		1
MM 106	Mathematics * *	1		1
MM 107	Mathematics * *	1		1
MM 109	Mathematics * *	1		1
MP 119	Technical Physics	3	3	4
GC 210	Statics	3		3
GC 220	Const. Estimating	2	3	3
		15	6	17

## CIVIL ENGINEERING TECHNOLOGY

### SEMESTER 3

NE 100	Economics 1	3		3
GC 310	Surveying 1	2	6	4
GC 320	Soils & Foundations	3		3
GC 330	Structures 1	2	3	3
	Elective: Humanities or Social Science	3		3
		13	9	16

### SEMESTER 4

GC 410	Reinf. Concrete Analysis	2	3	3
GC 420	Construction Management	3		3
GC 430	Transportation 1	3	3	4
LE 202	Technical Report Writing	3		3
BD 101	Computer Concepts	3	2	4
GC 450	Materials Testing Lab	1	2	2
		15	10	19

**\*\*Note:** Math MM 101 and MM 102 must be completed satisfactorily before any 2nd, 3rd, and 4th semester Civil Engineering courses can be taken.

## Computer Maintenance Technology

The Computer Maintenance Technology Program is designed to provide the student with the necessary electronics background and the computer "know-how" to deal with the ever-changing computer technology of the space age. This program will equip the student with well beyond entry-level skills in the area of computer service maintenance, a field in which both demand and remuneration is high. A typical position title is Computer Maintenance Service Technician.

**Minimum Grade Requirements:** Students in Computer Maintenance Technology must receive a grade of "D" or better. A Q.P.A. of 2.0 must be achieved for graduation. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Computer Maintenance Technology** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
EP 101	Intro. to Technology	2		1
ET 110	Basic Electronics 1	3		3
ET 115	Electronics Lab 1		4	2
ET 120	Electronics Graphics	1	2	2
MM 101	Mathematics *	1		1
MM 102	Mathematics *	1		1
MM 103	Mathematics *	1		1
NP 109	Human Relations at Work	3		3
		15	6	17



## SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
ET 210	Basic Electronics 2	3		3
ET 215	Electronics Lab 2		4	2
ET 220	Active Networks 1	3		3
ED 240	Intro. to Computer Organization & Prog.	2		2
MM 105	Mathematics *	1		1
MM 106	Mathematics *	1		1
MM 107	Mathematics *	1		1
		14	4	16

## SEMESTER 3

LE 202	Tech. Report Writing	3		3
ET 310	Active Networks 2	3		3
ET 340	Computer Architecture & Logic Circuitry	3		3
ED 330	Machine & Assembly Language Programming	3		3
ED 350	Dig. Electric. Lab 1		4	2
EP 320	Data Communications	3		3
		15	4	17

## SEMESTER 4

ED 420	Microprocessor Theory	3		3
ED 450	Adv. Computer Topics	3		3
ED 410	Adv. Digital Elec. Lab		4	2
ET 430	Digital Comp. Systems	3		3
ET 440	Integrated Electronics	3		3
MP 119	Technical Physics	3	3	4
		15	7	18

\*All math courses from MM 101 to MM 107 must be completed and passed by the start of September (3) third semester.

# Drafting and Design Technology

The Drafting and Design program attempts to meet the massive demand for people with basic entry-level skills in drafting. This need will increase with the proposed change to the Metric System. With this one-year certificate program, the student will be equipped to enter industry in such positions as a Drafting & Design Technician. Minimum Grade Requirements: students in Drafting & Design Technology must receive a grade of "D" or better. A Q.P.A. of 2.0 must be achieved for graduation. Upon the suc-

## DRAFTING AND DESIGN TECHNOLOGY

Successful completion of requirements for this program, as listed below, a **Certificate in Drafting & Design Technology** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
FB 110	Production Processes	3		3
MM 101	Mathematics	1		1
MM 102	Mathematics	1		1
MM 103	Mathematics	1		1
FB 120	Engin. Graphics 371	1	3	2
FD 110	Drafting & Design 1	2	6	4
FD 230	Kinematics	3		3
		15	9	18

### SEMESTER 2

GD 260	Graphic Design Lab	1	3	2
	Elective: Social Science	3		3
LE 202	Tech. Report Writing	3		3
FD 210	Drafting & Design 2	2	6	4
FD 220	Mechanics	4		4
		13	9	16

## Electrical Technology

The Electrical Technology program prepares students for work in the development, installation and maintenance of industrial automated systems. Graduates of the program have also been successful as field representatives for manufacturers in the areas of product application and sales. Students planning to enter this field should have a desire for achievement and involvement in mathematics, science and technology.

**Minimum Grade Requirements:** All "EE" and "ET" series Electrical Technology courses must be successfully completed with a grade of "D" or better for graduation. These Electrical Technology courses must be taken in a sequential order. That is, second semester courses cannot be taken until the first semester prerequisite courses are successfully completed as outlined in the Electrical Technology program. Before starting the third semester, the student must have successfully completed the Mathematics Modules MM 105-109. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Electrical Technology** will be awarded.

**SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
EE 110	Fund. of Electricity 311	3	3	4
EE 120	Engr. Graphics 311	3		3
NP 109	Human Relations at Work	3		3
MM 101	Mathematics *	1		1
MM 102	Mathematics *	1		1
MM 103	Mathematics *	1		1
MM 231	Engineering Computations	1		1
		16	3	17

**SEMESTER 2**

LE 200	Comp. 2: Intro. to Lit.	3		3
LE 203	Fundamentals of Speech	3		3
EE 210	A.C. Fundamentals	3	3	4
EE 220	Fund. of Electronics 311	4		4
MM 105	Mathematics * *	1		1
MM 106	Mathematics * *	1		1
MM 107	Mathematics * *	1		1
MM 109	Mathematics * *	1		1
		17	3	18

**SEMESTER 3**

EE 310	Elec. Cont. for Machines	2	3	3
EE 320	Ind. Electron. Circuits 1	2	3	3
EE 330	Semicond./Transistors 1	2	3	3
ET 340	Computer Conc. & Logic Cir.	3		3
MP 119	Technical Physics	3	3	4
		12	12	16

**SEMESTER 4**

LE 202	Tech. Report Writing	3		3
EE 410	Ind. Electron. Circuits 2	2	3	3
EE 430	Semicond./Transistors 2	2	2	3
EE 440	Electro-Mech Crt. Design	1	2	2
ED 420	Microprocessor Theory	3		3
EE 450	Oper. Amplifier Circuits	2	3	3
		13	10	17

\*\*Math courses MM 104 through MM 109 must be completed and passed by start of the third semester.

## Electronic Technology

The Electronic Technology program is organized to present learning activities that will qualify the graduate to perform job functions in areas such as communications, control systems, computers, circuit design and sys-

# ELECTRONIC TECHNOLOGY

tems testing. Training for a wide range of jobs is provided by a two-year technical program of specialized, intensive instruction designed to fit individuals for useful employment as highly skilled technicians in the electronics field.

Minimum Grade Requirement: Students in Electronics Technology must receive a grade of "D" or better. A Q.P.A. of 2.0 must be achieved for graduation. Upon the successful completion of the requirements for this program, as listed below, the degree of **Associate in Science in Electronic Technology** will be awarded.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
ET 115	Electronics Lab 1		4	2
ET 110	Basic Electronics 1	3		3
ET 120	Electronics Graphics	1	2	2
EP 101	Intro. to Technology	2		1
MM 101-103	Mathematics *	3		3
NP 109	Human Relations at Work	3		3
		15	6	17

## SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
ET 210	Basic Electronics 2	3		3
ET 215	Electronics Lab 2		4	2
ET 220	Active Networks 1	3		3
ED 240	Intr. to Comp. Organ. & Programming	2		2
MM 105-109	Mathematics *	4		4
		15	4	17

## SEMESTER 3

LE 202	Tech. Report Writing	3		3
ET 310	Active Networks 2	3		3
ET 320	Comm. Systems 1	3		3
ET 330	Fund. of Pulse & Dig. Cir.	3		3
ET 340	Comp. Archt. & Logic Cir.	3		3
ET 350	Electronics Lab 3		4	2
		15	4	17

## SEMESTER 4

ET 420	Comm. Systems 2	3		3
ET 430	Digital Computer Systems	3		3
ET 440	Integrated Electronics	3		3
ET 450	Electronics Lab 4		4	2
ED 420	Microprocessor Theory	3		3
MP 119	Technical Physics	3	3	4
		15	7	18

All Math courses from MM 101 - MM 109 must be completed & passed by start of Semester 3.



# Environmental Technology

The Department of Environmental Control Technology offers air and water quality technology combined with wastewater treatment technology. The program is oriented toward environmental control with the objective of training para-professionals who can assist the engineer in detecting and measuring pollution and installing control facilities, or who can operate purification facilities. The graduates will find employment in governmental agencies, industrial facilities, engineering firms, municipal and engineering offices, waste treatment plants and related facilities. The course of study is specifically designed for those students who are interested in the aspects of pollution control. It is definitely career-oriented and full credit generally will not be transferable to a four-year college. Students desiring to enter the program should have had one year of chemistry plus one year of algebra or its equivalent. Those who do not have this background may enroll but they must expect to attend one additional year or two summer sessions to make up their deficiencies. The students will be trained in both the theory and its application and will receive hands-on instruction on many items of commercial equipment.

**Minimum Grade Requirement:** The minimum passing grade for any individual course in the Environmental Technology Department shall be a "D" (60). The minimum average for graduation from the department is a "C". Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Environmental Technology** will be awarded.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MM 101-103	Mathematics	3		3
MC 101	General Chemistry 101	3	3	4
HE 110	Environmental Studies	3		3
HE 120	Process Problems 1	3	2	4
MM 231	Engineering Computation	1		1
		16	5	18

## SEMESTER 2

LE 202	Technical Report Writing	3		3
MB 120	Envir. Microbiology	2	3	4
MC 201	General Chemistry 102	3	3	4
HE 210	Treatment Plant Oper. 1	3		3
HE 220	Basic Instrumentation	3		3
		14	6	17

# ENVIRONMENTAL TECHNOLOGY

## SUMMER 1

HE 230	Practicum (Summer)			3
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## SEMESTER 3

MP 119	Technical Physics	3	3	4
NE 100	Economics 1	3		3
HE 310	Water Sample, Analysis and Control Process	2	3	3
HE 320	Ind. Health & Safety	3		3
HE 330	Treatment Plant Oper. 2	2	3	3
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		13	9	16

## SEMESTER 4

NP 109	Human Relations at Work	3		3
HE 410	Wastewater Samp. & Process	2	3	3
HE 420	Systems Maintenance	3		3
HE 430	Air Sample Analysis & Control Process	2	3	3
	Elective: Social Science	3		3
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		13	6	15

# Graphic Arts Technology

The Graphic Arts Department offers a curriculum designed to prepare students for the many and varied careers available in the commercial printing and advertising business. The courses are devoted to functional discussions crossing most branches of the printing industry. It is the objective of the department to relate the many branches of the industry to each other and to the totality of contemporary printing. Rochester Institute of Technology, as well as other institutions offering Graphic Arts specialty courses, have indicated that they will accept credits from this program toward an advanced degree in Printing and Publishing.

Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Graphic Arts Technology** will be awarded.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
NP 100	General Psychology	3		3
GA 110	Line Photography	2	3	3
GA 120	Typography & Copy Prep.	2	3	3
NE 100	Economics 1	3		3
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		13	6	15

**SEMESTER 2**

LE 200	Comp. 2: Intro. to Lit.	3		3
GA 210	Basic Lithographic Image Assembly		3	3
		2		
GA 220	Layout & Copy Preparation	2	3	3
GA 230	Alphabet Keybd. Mastery	3		1
MM 120	Contemporary Math 1	3		3
	Elective: Social Science	3		3
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		16	6	16

**SEMESTER 3**

GA 380	Chem. of Lithography 1	3		3
GA 370	Printing Management	3		3
GA 340	Prod. Techniques 1		9	3
GA 350	Graphic Design (or)	2	3	3
GA 360	Offset Presswork 1			
GA 320	Adv. Color Lithographic Image Assembly	2	3	3
		<hr/>	<hr/>	<hr/>
		10	15	15

**SEMESTER 4**

GA 410	Chem. of Lithography 2	3	3	4
GA 480	Printing Produc. Mgmt.	3		3
GA 450	Prod. Techniques 2		9	3
GA 460	Graphic Des./Pub. & Pack (or)	2	3	3
GA 470	Offset Presswork 2			
GA 310	Halftone Photography	2	3	3
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		10	18	16

GA 198 and GA 199, G. A. Coop will be allowed as a substitute course for GA 340 and GA 450, Production Techniques 1 and 2, if an appropriate work experience of a minimum 12 hours per week is available to the student and is approved by the G. A. Coop advisor.

## Heat/Power/Air Conditioning Technology

The Heat/Power and Air Conditioning program is unique in the sense that it is one of two such programs offered on the East Coast. An up-to-date extensive laboratory facility has been created for this course, utilizing the very latest in equipment and control devices. Seniors who successfully complete all course requirements are awarded the Associate in Science

# HEAT/POWER/AIR CONDITIONING TECHNOLOGY

Degree. In addition, they are given the opportunity to earn additional awards by taking the Certificate of Competency and the Stationary Engineers License examinations as administered by the Massachusetts Department of Public Safety. Placement opportunities are excellent and varied. The Heat/Power and Air Conditioning graduate is prepared to enter a stable, basic industry that offers career positions such as manufacturers' representatives, field service engineers, energy system detailers/designers, lab technicians, construction field estimators, sales engineers and independent businessmen.

**Minimum Grade Requirement:** Students must achieve a "D" as the minimum passing grade in all HP series technical courses. A student must have earned a minimum Q.P.A. of 2.0 for graduation. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Heat/Power/Air Conditioning Technology** will be awarded.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MM 101-103	Mathematics	3		3
NP 109	Human Relations at Work	3		3
HP 130	Engr. Graphic 331		3	1
HP 110	Theory of Controls	3		3
HP 120	Mech. Skills/Proced. 1		3	1
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		12	6	14

## SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
HP 210	Hydronic Layouts & Const.		3	1
HP 220	Combustion Control Cir.	3		3
HP 230	Mech. Skills & Proc. 2		3	1
HP 240	Princ. of Refrigeration	3		3
HE 220	Instrumentation	3		3
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		12	6	14

## SEMESTER 3

MC 100	Chemistry	3	3	4
HP 310	Comm. Progr. Controls	2	4	4
HP 320	Heating Syst. Design	3		3
HP 330	Power Plant Oper. 1	2	2	3
HP 340	Fund. of Air Cond.	2	2	3
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		12	11	17

## SEMESTER 4

LE 202	Tech. Report Writing	3		3
HP 410	Adv. Heat. Syst. Design	3		3
HP 420	Ind. Control Applic.	2	4	4
HP 430	Power Plant Oper. 2	2	2	3
HP 440	Air Cond. Laboratory	2	2	3
		<hr/>	<hr/>	<hr/>
		12	8	16



# Instrumentation Technology

The Instrumentation Technology program is designed to prepare students for employment as highly skilled technicians in the broad field of instrumentation.

Instrumentation refers to the instruments for sensing changes in heat or pressure, for recording information, or for controlling manufacturing processes that are vital in research, business, space technology, and many areas of industry. Because the instrumentation is so important, there is a great demand for people trained to install, calibrate, and maintain this equipment.

Graduates of this two-year program leading to an Associate in Science degree may be employed as Instrumentation Technicians, Engineering Associates - Instrumentation Research or Process Technicians, or Instrumentation Field Service Technicians. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Instrumentation Technology** will be awarded.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
EB 120	Measuring Principles 1	2	3	3
NP 109	Human Relations at Work	3		3
LE 100	English Composition 1	3		3
ET 110	Basic Electronics 1	3		3
MM 101-103	Mathematics	3		3
ET 115	Electronics Lab 1		4	2
		14	7	17

## SEMESTER 2

EB 230	Measuring Principles 2	2	3	3
LE 200	Comp. 2: Intro. to Lit.	3		3
ET 210	Basic Electronics 2	3		3
MM 105-107	Mathematics	3		3
ET 215	Electronics Lab 2		4	2
ET 220	Active Networks 1	3		3
IT 120	Graphic For Instr. Tech	1	2	2
		15	9	19

## SEMESTER 3

IT 310	Control Principles 1	3	3	4
EB 320	Calibration & Standardiz.	1	3	2
MP 119	Technical Physics	3	3	4
ET 340	Com. Architecture & Log. Cir.	3		3
IT 320	Hydraulics & Pneumatics	3		3
		13	9	16

**SEMESTER 4**

IT 410	Instr./Repair & Trouble Shooting	2	2	3
EB 420	Instrumentation Project		6	2
NE 100	Economics 1 (or)			
	Elective: Soc. Science	3		3
LE 202	Tech. Report Writing	3		3
ED 420	Microprocessor Theory	3		3
		<hr/>	<hr/>	<hr/>
		11	8	14

## Landscape/Plant Science Technology

Students enrolled in this program will receive a broad base in the development and maintenance of land areas. Topics ranging from plant identification and use, tree and landscape maintenance, to landscape design and construction are included as part of the curriculum. The importance of qualified field personnel is stressed throughout the program. Students will be given an appreciation and understanding of the effects that can be created by well-planned landscape design and maintenance. Graduates may be employed by nurseries, landscape contractors, private and public parks and by business firms as grounds maintenance specialists. With the rapid development of more complex and varied materials and equipment for use in this field, there is an increasing need for properly trained personnel to fill responsible positions both in field work and in planning and management.

**Minimum Grade Requirement:** All Landscape Technology courses shall be completed with a grade of "D" (63% or 1.0) or above. Any course failed must be repeated before graduation and each course may be repeated only once. The student must also have achieved a 2.0 Q.P.A. and shall have remained in good academic standing as outlined below:

- A) At the beginning of the second semester, the student must maintain a 1.5 Q.P.A.
- B) At the beginning of the third semester, the student must maintain a 1.7 Q.P.A.
- C) At the beginning of the fourth semester, the student must maintain a 1.9 Q.P.A.

A student not meeting the above academic standards will be placed on academic probation for one semester. If, at the end of this period, no improvement has taken place, the student will be removed from the program. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Landscape Technology** will be awarded.

**SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
NP 109	Human Relations at Work	3		3
MM 120	Contemporary Math 1	3		3
GL 110	Trees in Landscape	1	4	3
GL 120	Prin. of Horticulture	2	3	3
		12	7	15

**SEMESTER 2**

LE 200	Comp. 2: Intro. to Lit.	3		3
GL 210	Presentation Techniques		6	3
MB 108	General Botany	3	3	4
GL 220	Turf Management	2	2	3
	Elective: Social Science	3		3
		11	11	16

**SEMESTER 3**

GL 310	Shrubs in the Landscape	1	4	3
GL 320	Arboriculture	2	2	3
GL 330	Landscape Design 1	1	4	3
GC 305	Surveying 721	2	3	3
GL 350	Landscape Oper. (Plant)	2	2	3
LE 203	Fundamentals of Speech	3		3
		11	15	18

**SEMESTER 4**

GL 410	Plant Propagation	2	2	3
GL 420	Landscape Design 2	1	4	3
GL 430	Earth Forms & Struct.	2	2	3
BK 420	Small Business Mgmt.	3		3
GL 450	Entomology/Disease Control	2	2	3
		10	10	15

## Laser Electro-Optics Technology

Laser Electro-Optics Technology is one of the more rapidly growing technical fields in America today. The trained technician can expect favorable job opportunities, promotion potential and rapid advancement. STCC's program is designed to expose the student to four major areas: Laser Systems,

# LASER ELECTRO-OPTICS TECHNOLOGY

Electronics, Optics and Electro-Optics. The student will learn about the laser both as an instrument and as an integral part of a system designed for industrial, medical and scientific application. The electronics used in generating and controlling the laser will be taught. The use of the laser in electronics production, testing, maintenance, research and development, is part of the curriculum. In the field of optics, the student will acquire a good working knowledge of light, geometrical and physical optics, optical components and optical systems. Finally, the student will devote a large portion of his time to incorporating optical and laser skills and knowledge into developing Electro-Optical Techniques and Systems.

Minimum Grade Requirement: students must receive a grade of "D" or better. A Q.P.A. of 2.0 must be achieved for graduation.

Upon the successful completion of requirements for this program, as listed below, the **Associate in Science Degree in Laser Electro-Optics Technology** will be awarded.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
ET 110	Basic Electronics 1	3		3
ET 115	Electronics Lab 1		4	2
ET 120	Electronic Graphics	1	2	2
EP 101	Intro. to Technology	2		1
MM 101-103	Mathematics**	3		3
NP 109	Human Relations at Work	3		3
		15	6	17

## SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
ET 210	Basic Electronics 2	3		3
ET 215	Electronics Lab 2		4	2
ET 220	Active Networks 1	3		3
ED 240	Intro. to Comp. Organ. and Programming	2		2
MM 105-109	Mathematics**	4		4
		15	4	17

## SEMESTER 3

LE 202	Technical Report Writing	3		3
EL 320	Introduction to Lasers	3	3	4
EL 330	Geometrical Optics	3	3	4
ET 310	Active Networks 2	3		3
ET 340	Comp. Arch. & Logic Syst.	3		3
		15	6	17



**SEMESTER 4**

EL 410	Laser Projects	3	3	4
EL 420	Wave Optics	3	3	4
EL 430	Laser Elec.-Optic Comp.	3		3
ET 440	Integrated Electronics	3		3
MP 119	Technical Physics	3	3	4
		15	9	18

**\*\*NOTE:** All Math courses from MM 101 through MM 107 must be completed and passed by start of Semester Three (3).

## Machine Design Technology

This program prepares the graduate as an Engineering Aide or Technician in the fields of mechanical, industrial and manufacturing engineering. The program develops the necessary background in Mathematics, Engineering Graphics, Physics, Chemistry, Strength of Materials, Fluid Power and Design Principles. To qualify in the fields listed above, graduates are employed as detail draftsmen, tool and machine designers, laboratory assistants in research and development, sales engineers and field representatives. In the design laboratory, the student is given the opportunity to use his initiative and creative ability in designing machines and tool complexes of his own. Since a background in high school algebra, physics, mechanical drawing and chemistry is required in the first semester, these courses must be prerequisites.

**Minimum Grade Requirement:** For all "FD" series technical courses, a grade of "D" (1.3) or better will be required. A 2.0 Q.P.A. will be accepted for graduation. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Machine Design Technology** will be awarded.

**SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MM 101-MM 103	Mathematics	3		3
	Elective: Social Science	3		3
FB 110	Production Processes	3		3
FD 110	Drafting & Design 1	2	6	4
FB 120	Engineering Graphics	1	3	2
		15	9	18

**SEMESTER 2**

LE 202	Technical Report Writing	3		3
FD 210	Drafting & Design 2	2	6	4
FD 220	Mechanics	4		4
FD 230	Kinematics	3		3
		12	6	14

**SEMESTER 3**

FB 320	Strength of Materials	4		4
FD 310	Drafting & Design 3	2	6	4
FD 320	Design of Machine Elem.	4		4
MP 119	Technical Physics	3	3	4
		13	9	16

**SEMESTER 4**

FB 420	Fluid Power	3	2	4
FB 430	Engineering Economy	3		3
FD 410	Drafting & Design 4	2	6	4
FD 450	Project Design Lab.	1	3	2
	Elective	3		3
		12	11	16

## Microprocessing Technology Option to Electronic Technology

The Microprocessing Technology program is designed to provide the student with the necessary electronics background and microcomputer "know-how" to deal with ever increasing use of microprocessors in every phase of human endeavor. The program will equip the students with the necessary skills to become enrolled in one of the more rapidly growing technical fields in America today. The trained technician can expect favorable job opportunities, promotional potential and rapid advancement as a result of being in step with the job demands of society.

The students will learn both the traditional background of Analog and Digital circuits and systems and will also have specific training in the areas of architecture, interfacing, and data communications networks. These students would be able to deal with the special problems confronting design and implementation of microprocessor-based system.

**Minimum Grade Requirements:** Students in Microprocessing Technology Option must receive a grade of "D" or better for graduation. Upon successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Electronic Technology** will be awarded.

**SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
EP 101	Intro. to Technology	2		1
ET 100	Basic Electronics 1	3		3
ET 115	Electronics Lab. 1		4	2
ET 120	Electronics Graphics	1	2	2
MM 101-103	Mathematics	3		3
NP 109	Human Relations at Work	3		3
		15	6	17

**SEMESTER 2**

LE 200	Comp. 2: Intro. to Lit.	3		3
ED 240	Intro. to Computer Organ. & Programming	2	2	2
ET 210	Basic Electronics 2	3		3
ET 215	Electronics Lab. 2		4	2
ET 220	Active Networks 1	3		3
MM 105-109	Mathematics	4		4
		15	6	17

**SEMESTER 3**

LE 202	Tech. Report Writing	3		3
ED 330	Machine & Assembly Language Programming	3		3
ED 350	Digital Electronic Lab		4	2
ET 310	Active Networks 2	3		3
EP 310	Microcomputer Architec. & Logic Systems	3		3
EP 320	Data Communications	3		3
		15	4	17

**SEMESTER 4**

ED 420	Microprocessor Theory	3		3
EP 410	Microcomputer Lab		4	2
EP 420	Adv. Microcomp. Topics	3		3
EP 430	Microcomp. Interfacing	3		3
ET 440	Integrated Electronics	3		3
MP 119	Technical Physics	3	3	4
		15	7	18

# Solar Energy

## Option to Heat/Power/Air Conditioning Technology

Less fuel to provide the energy needs of the country has resulted in the search for alternative energy sources. Although not a new concept, the use of the sun to provide energy has become increasingly popular in the last few years. It is estimated that, within a short period of time, packaged solar systems will be in mass production. Solar energy as an alternative to today's fuel will become a reality in the not too distant future. Allied to this anticipated growth will be the need for trained technicians in the solar energy field. Successful graduates of the Solar Energy Option will be qualified to install complete water or air-based solar collector heating systems in new or existing structures. Also, graduates will be able to determine, through on-site inspection, the least expensive combination of solar collector, thermal reservoir, insulation and back-up burners for any structure. In addition, the student will learn to evaluate the cost/effectiveness of new solar collector technologies. Various positions awaiting the Solar Energy Option graduate are: solar panel manufacturer's representative; field service engineer (solar); solar energy system detailer/designer; construction field estimator; solar system sales engineer and energy consultant. Upon the successful completion of requirements for this course, as listed below, the degree of **Associate in Science in Heat/Power/Air Conditioning Technology** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MM 101-103	Mathematics	3		3
NP 109	Human Relations at Work	3		3
HP 110	Theory of Controls	3		3
HP 120	Mech. Skills/Proced. 1		3	1
HP 130	Eng. Graphics 331		3	1
		12	6	14

### SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
HE 220	Instrumentation	3		3
HP 210	Hydronic Layouts & Cons.		3	1
HP 220	Combustion Contr. Cir.	3		3
HP 230	Mech. Skills/Proced. 2		3	1
HP 240	Prin. of Refrigeration	3		3
HS 210	Intro. to Alt. Energy Systems	2		2
		14	6	16



**SEMESTER 3**

HS 310	Solar Energy 1	3		3
HP 310	Comm. Program Controls	2	4	4
HP 320	Heating System Design	3		3
HP 340	Fund. of Air Conditioning	2	2	3
MC 100	Chemistry 1	3	3	4
		13	9	17

**SEMESTER 4**

LE 202	Technical Report Writing	3		3
HP 410	Adv. Heat. System Design	3		3
HP 420	Ind. Control Applic.	2	4	4
HP 440	Air Conditioning Lab	2	2	3
HS 430	Solar Energy 2	2	4	4
		12	10	17

## Telecommunications Technology

This program is designed to provide students with an excellent opportunity to pursue a viable career in mass media communications. Graduates of this program will qualify for production, programming, or managerial positions in local television stations and cable television stations, and in industry, education, and medicine where television is utilized.

**Minimum Grade Requirement:** The minimum grade for major courses in the Telecommunications Technology program is "C." All students must maintain a "C" plus average in order to be awarded a degree in Production Technician. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Telecommunications Technology** will be awarded. These credits are exclusive of the TV Honors courses.

**SEMESTER 1**

No.	Course Title	Class	Lab	Credits
NP 100	General Psychology	3		3
LE 100	English Composition 1	3		3
GT 110	Fund. in TV Writing	3		3
GT 120	Video Techniques	3		3
GT 130	Video Production	3		3
GT 140	Commun. in Today's World	3		3
		18		18

# TELECOMMUNICATIONS TECHNOLOGY

## SEMESTER 2

GT 210	Advanced TV Writing	3		3
NS 100	Intro. to Sociology	3		3
GT 220	TV Prod. & Directing	3		3
GT 230	Speaking on TV	3		3
GT 240	Anal. of Comm. & Public TV	3		3
		<hr/>		<hr/>
		15		15

## SEMESTER 3

LE 203	Fund. of Speech or Liberal Arts Elective	3		3
NE 100	Economics 1 or Soc. Sci. Elective	3		3
GT 310	Instructional TV Tech.	3		3
GT 320	TV Journalism	3		3
GT 330	TV Production Practicum		6	3
		<hr/>	<hr/>	<hr/>
		12	6	15

## INTERSESSION

GT 340	TV Honors - Permission Only	4		4
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## SEMESTER 4

GT 410	Instructional TV Prod.	3	2	4
GT 420	Advanced TV Journalism	3		3
GT 430	Adv. TV Production Prac.		6	3
BK 110	Prin. of Management (or)	3		3
GT 440	Cable Television (or) Liberal Arts Elective	3		3
BI 110	Principles of Marketing (or)			
NH 210	Modern U.S. History			
		<hr/>	<hr/>	<hr/>
		12	8	16

# Engineering and Science Transfer



## Engineering and Science Transfer

The Engineering and Science Transfer Program at STCC is for individuals who are interested in earning a Bachelor of Science Degree in one of the Engineering disciplines (Chemical, Civil, Electrical, Environmental, Industrial or Mechanical Engineering) or in Computer Science Transfer, Biology, Chemistry, Mathematics, Physics, Pre-Medicine/Pre-Dentistry/Pre-Veterinary or Pre-Pharmacy. Each of these curricula provides a student with a fundamental background in science, mathematics and the humanities, and supplements it with technical electives from the principal engineering and science disciplines. They permit a student to earn his Associate's Degree in two years and to transfer to a four-year college or university with a junior level standing.

All students must take the SAT Examination and have the scores submitted with their applications in order to be considered for admission to any option of the Engineering and Science Transfer Program.

**Minimum Grade Requirements:** A full-time student in any of the curriculum options of the Engineering & Science Transfer Department must complete at least 75% of the mathematics, science, and technical (ME series) courses that are prescribed by his curriculum for the given semester in which the student is enrolled. Any student not meeting these requirements will be dropped from the program. Reinstatement will be permitted only after the student, either through another college or through STCC'S Division of Continuing Education, has completed all of the required mathematics, science, and technical courses required by his curriculum at the time of his dismissal.

A student enrolled in the Pre-Engineering Option of General Studies must have a cumulative B-average in his mathematics and science courses. Failure to achieve this average will prohibit the student from transferring to any of the options in the Engineering and Science Transfer Department.

## Engineering Transfer

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MC 103	General Chemistry 21	3	3	4
ME 103	Intro. to Engineering 21	2	3	3
GD 110	Prog. Engr. Graphics		3	1
MM 155	Calculus 1	6		4
	Elective: Social Science	3		3
		17	9	18



**SEMESTER 2**

LE 200	Comp. 2: Intro. to Lit.	3		3
MP 132	University Physics 1	4	3	5
MC 203	General Chemistry 22	3	3	4
ME 104	Intro. to Engr. 22 Computer Programming	3		3
MM 255	Calculus 2	6		4
		19	6	19

**SEMESTER 3**

MP 232	University Physics 2	4	3	5
	Elective: Math, Science, or Engineering	3		3
	Elective: Engineering	3		3
MM 355	Calculus 3	6		4
	Elective: Social Science or Humanities	3		3
		19	3	18

**SEMESTER 4**

ME 421/	Engr. Measure. & Anal. (or)			
422	Elective: Engineering	3		3
	Elective: Engineering	3		3
	Elective: Math, Science, or Engineering	3		3
MM 455	Differential Equa.	6		4
	Elective: Social Science or Humanities	3		3
		18		16

By choosing the appropriate Technical & General Electives in the 3rd and 4th semesters, a student can major in Chemical, Civil, Electrical, Environmental, Industrial or Mechanical Engineering.

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

## Computer Science Transfer (Option to Engineering & Science Transfer)

**SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MC 103	General Chemistry 21	3	3	4
MK 103	Intro. to Computer Programming	3	3	4
MM 155	Calculus 1	6		4
	Elective: Social Science	3		3
		18	6	18

# COMPUTER SCIENCE TRANSFER

## SEMESTER 2

LE 200	Composition 2: Intro. to Lit.	3		3
MC 203	General Chemistry 22	3	3	4
MK 203	Non-Numerical Processing	3	3	4
MM 255	Calculus 2	6		4
	Elective: Humanities or Soc. Science	3		3
		18	6	18

## SEMESTER 3

MK 320	Computer Organization & Digital Logic	3		3
MK 401	Data Structures & Algorithms	3	3	4
MM 439	Linear Algebra	3	3	4
MM 375	Discrete Mathematical Structures 1	3		3
	Elective: Humanities or Soc. Science	3		3
		15	6	17

## SEMESTER 4

MM 345	Statistical Analysis	4		4
MM 475	Discrete Mathematical Structures 2	3		3
MK 310	Machine & Assembly Language	3	3	3
	Elective: Humanities or Soc. Science	3		3
	Elective: Humanities	3		3
		16	3	16

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

# Science Transfer

## BIOLOGY OPTION

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
MC 103	General Chemistry 21	3	3	4
MB 106	Biology 1	3	3	4
LE 100	English Composition 1	3		3
NS 100	Intro. to Sociology	3		3
MM 155	Calculus 1*	6		4
		18	6	18

**SEMESTER 2**

MC 203	General Chemistry 22	3	3	4
MB 206	Biology 2	3	3	4
LE 200	Comp. 2: Intro. to Lit.	3		3
NP 100	General Psychology	3		3
MM 255	Calculus 2**	6		4
		<hr/>	<hr/>	<hr/>
		18	6	18

**SEMESTER 3**

MC 320	Organic Chemistry 1	3		3
MC 321	Organic Chemistry Lab		4	1
	Elective: Biology	3	3	4
	Elective: Social Science	3		3
	Elective: General (2)	6		6
		<hr/>	<hr/>	<hr/>
		15	7	17

**SEMESTER 4**

MC 420	Organic Chemistry 2	3		3
MC 421	Organic Chemistry Lab		4	1
	Elective: Biology	3	3	4
	Elective: Humanities	3		3
	Electives: General (2)	6		6
		<hr/>	<hr/>	<hr/>
		15	7	17

\*MM 150 Pre-Calculus 1 may be taken in place of MM 155.

\*\*MM 222 Finite Math 2 may be taken in place of MM 255.

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

**CHEMISTRY OPTION****SEMESTER 1**

No.	Course Title	Class	Lab	Credits
MC 103	General Chemistry 21	3	3	4
LE 100	English Composition 1	3		3
	Elective: Soc. Science	3		3
	Elective: Foreign Lang/ Humanities	3		3
MM 155	Calculus 1	6		4
		<hr/>	<hr/>	<hr/>
		18	3	17

## SCIENCE TRANSFER

### SEMESTER 2

MC 203	General Chemistry 22	3	3	4
MP 132	University Physics 1	4	3	5
LE 200	Comp. 2: Intro. to Lit.	3		3
	Elective: Foreign Lang/ Humanities	3		3
MM 255	Calculus 2	6		4
		19	6	19

### SEMESTER 3

MC 320	Organic Chemistry 1	3		3
MC 321	Organic Chemistry Lab. 1		4	1
MP 232	University Physics 2	4	3	5
	Elective: Technical	3		3
MM 355	Calculus 3	6		4
		16	7	16

### SEMESTER 4

MC 420	Organic Chemistry 2	3		3
MC 421	Organic Chemistry Lab. 2		4	1
MC 350	Analytical Chemistry	2	4	4
	Elective: Technical	3		3
	Elective: Social Science	3		3
MM 455	Differential Equations	6		4
		17	8	18

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

## MATHEMATICS OPTION

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
MC 103	General Chemistry 21	3	3	4
LE 100	English Composition 1	3		3
	Elective: Soc. Science	3		3
	Elective: Foreign Lang./ Humanities	3		3
MM 155	Calculus 1	6		4
		18	3	17

### SEMESTER 2

MC 203	General Chemistry 22	3	3	4
LE 200	Comp. 2: Intro. to Lit.	3		3
	Elective: Social Science	3		3
	Elective: Foreign Lang./ Humanities	3		3
MM 255	Calculus 2	6		4
		18	3	17



**SEMESTER 3**

MP 130	College Physics 1 or Equivalent	3	3	4
	Elective: Humanities	3		3
	Elective: Social Science	3		3
MM 457	Intro. to Math Analysis	3		3
MM 355	Calculus 3	6		4
		<hr/>	<hr/>	<hr/>
		18	3	17

**SEMESTER 4**

ME 104	Intro. to Engr. 22 - Computer	3		3
MP 230	College Physics or Equivalent	3	3	4
MM 439	Linear Algebra	3		3
	Elective: Humanities or Soc. Science	3		3
MM 455	Differential Equations	6		4
		<hr/>	<hr/>	<hr/>
		18	3	17

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

**PHYSICS OPTION****SEMESTER 1**

No.	Course Title	Class	Lab	Credits
MC 103	General Chemistry	3	3	4
LE 100	English Composition 1	3		3
	Elective: Social Science	3		3
	Elective: Foreign Lang./ Humanities	3		3
MM 155	Calculus 1	6		4
		<hr/>	<hr/>	<hr/>
		18	3	17

**SEMESTER 2**

MC 203	General Chemistry 22	3	3	4
MP 132	University Physics 1	4	3	5
LE 200	Comp. 2: Intro. to Lit.	3		3
	Elective: Foreign Lang./ Humanities	3		3
MM 255	Calculus 2	6		4
		<hr/>	<hr/>	<hr/>
		19	6	19

## SCIENCE TRANSFER

### SEMESTER 3

MP 232	University Physics 2	4	3	5
ME 320	Systems Analysis 1	3	3	4
	Elective: Social Science	3		3
	Elective: Technical	3		3
MM 355	Calculus 3	6		4
		19	6	19

### SEMESTER 4

MP 332	University Physics 3	4	3	5
ME 421	Engr. Measurements & Analysis	2	3	2
	Elective: Technical	3		3
	Elective	3		3
MM 455	Differential Equations	6		4
		18	6	17

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

## PRE-MED/PRE-DENTAL/PRE-VET OPTION

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
MC 103	General Chemistry 21	3	3	4
MB 106	Biology 1	3	3	4
LE 100	English Composition 1	3		3
NS 100	Intro. to Sociology	3		3
MM 155	Calculus 1	6		4
		18	6	18

### SEMESTER 2

MC 203	General Chemistry 22	3	3	4
MB 206	Biology 2	3	3	4
LE 200	Comp. 2: Intro. to Lit.	3		3
	Elective: General	3		3
MM 255	Calculus 2	6		4
		18	6	18

### SEMESTER 3

MP 130	College Physics 1	3	3	4
MC 320	Organic Chemistry 1	3		3
MC 321	Organic Chemistry Lab 1		4	1
NP 100	General Psychology	3		3
	Elective: Biology	3	3	4
	Elective: General	3		3
		15	10	18

**SEMESTER 4**

MC 420	Organic Chemistry 2	3		3
MC 421	Organic Chemistry Lab 2		4	1
MP 230	College Physics 2	3	3	4
	Elective: Biology	3	3	4
	Elective: Humanities	3		3
	Elective: Social Science	3		3
		<hr/>	<hr/>	<hr/>
		15	10	18

Upon the successful completion of the requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

**PRE-PHARMACY OPTION****SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MC 103	General Chemistry 21	3	3	4
MB 106	Biology 1	3	3	4
MM 150	Pre-Calculus 1	6		4
	Elective: Social Science	3		3
		<hr/>	<hr/>	<hr/>
		18	6	18

**SEMESTER 2**

LE 200	Comp. 2: Intro. to Lit.	3		3
MC 203	General Chemistry 22	3	3	4
MB 206	Biology 2	3	3	4
MM 250	Pre-Calculus 2 (or)			
MM 222	Finite Mathematics 2	3		3
	Elective: Social Science	3		3
		<hr/>	<hr/>	<hr/>
		15	6	17

**SEMESTER 3**

MP 130	College Physics 1	3	3	4
MC 320	Organic Chemistry 1	3		3
MC 321	Organic Chemistry Lab 1		4	1
AA 101	Prog. Med. Terminology	1	2	2
NS 100	Intro. to Sociology	3		3
	Elective: Humanities	3		3
		<hr/>	<hr/>	<hr/>
		13	9	16

# SCIENCE TRANSFER

## SEMESTER 4

MP 230	College Physics 2	3	3	4
MC 420	Organic Chemistry 2	3		3
MC 421	Organic Chemistry Lab 2		4	1
LE 203	Fundamentals of Speech	3		3
	Elective: Humanities	3		3
	Elective: Social Sci.	3		3
		15	7	17

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

## Engineering Transfer/ Technology Core

The Engineering Technology Core Program is a general technology program. It is for students who do not want to major in any specific technology but want a broad background. If, after spending one year in the Core Technology Program, a student becomes interested in a specific technology, it is possible for him to transfer to that technology.

This program is also designed to interface with both the Engineering Transfer Program and the Pre-Engineering Option (Level 2) of the General Studies Program. A student, after spending one year in either of these programs, may transfer to the Engineering Technology Core Program with no loss of credit. A student who completes the entire Engineering Technology Core Program is awarded the **Associate of Science Degree in Engineering and Science Transfer**.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MC 100	Chemistry 1	3	3	4
ET 115	Electronic Lab 1		4	2
GD 110	Engr. Graphics Module 1		3	1
ET 110	Basic Electronics 1	3		3
MM 150	Pre-Calculus 1	6		4
		15	10	17

## SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
MP 119	Technical Physics	3	3	4
ET 210	Basic Electronics 2	3		3
ET 215	Electronic Lab 2		4	2
MM 250	Pre-Calculus 2	6		4
MM 231	Engr. Computations	1		1
		16	7	17



# ENGINEERING TRANSFER/TECHNOLOGY CORE

## SEMESTER 3

	Elective: Social Science	3		3
FB 320	Strength of Materials	4		4
FD 310	Drafting & Design 3	2	6	4
ME 330	Intro. to Material Sci.	3		3
ME 331	Intro. to Material Sci. Lab		3	1
MM 155	Calculus 1	6		4
		<hr/>	<hr/>	<hr/>
		18	9	19

## SEMESTER 4

	Elective: Social Science	3		3
	Elective: Technical	3		3
ME 104	Intro. to Engr. 22 (Computer)	3		3
	Elective: Technical	3		3
MM 255	Calculus 2	6		4
		<hr/>	<hr/>	<hr/>
		18		16

## Course Descriptions



## Accounting (See Business Administration)

### Advanced Metals Machining Technology

#### **FA 110—METAL MACHINING 1**

5 credits

Students will become familiar with drilling and tapping, boring, counterboring, countersink, spotfacing, reaming, horizontal shaping and filing, hacksaws, powersaws, bandsaws, scales, micrometers, verniers, calipers and combination square.

*Offered Fall Semester*

#### **FA 130—MACHINE TOOL TECHNIQUES**

1 credit

Covers industrial safety practices, principles of measuring using semi-precision and precision devices. Development of skills in machining techniques, cutting and hand tool, common to bench work and assembly. Application of thread series, tolerances, clearances, limits, fits and other mechanical specifications used in the interchangeability of parts in the automotive industry. Includes lectures, demonstrations, and lab participation by the student.

#### **FA 210—MACHINING 2**

5 credits

Students will become familiar with dial indicators, gauge blocks, sinebar, various gauges, electric and electronic measuring devices, comparator, use of surface plate, scribe, dividers, and center punch. Also slot and slab milling, gang milling, form milling, angle milling, step milling and slotting, index head and index table for both horizontal and vertical work.

*Offered Spring Semester*

#### **FA 310—METAL MACHINING 3**

5 credits

After having taken one semester of Metal Machining 1 and 2, the student is now familiar with the use of equipment related to inspection of the workplace, use of gauge blocks, sinebar and other allied equipment, surface finish and control checks. Familiarization with engine lathe work, roughland finish turning, facing, knurling, form turning, threading chuck work, both three jaw and four jaw, then grinding, flat surface, slots, shoulders, angles and forms.

*Offered Fall Semester*

#### **FA 320—WORK SIMPLIFICATION**

4 credits

A broad approach to the uses of motion and time study in industry. The use of various types of charts and operational processes in general problem solving are developed. Typical problems requiring the application of operational analysis are undertaken. Consideration is also given to the work place, the work area and the human engineering. The problem solving technique of evaluating alternate solutions is stressed.

*Offered Spring Semester*

#### **FA 410—METAL MACHINING 4**

5 credits

The concepts of numeric control principles and application, how to write a program, point-to-point method in drilling, milling and contour milling, using the flexowriter. More detailed layout using jigs and fixtures also will be studied. Special applications applicable to set-up on machinery also will be studied.

*Offered Spring Semester*

#### **FA 420—SPECIALIZED MACHINERY**

1 credit

(FIELD TRIPS) Theory of planing, boring, honing, broaching, turret lathe, production machinery, abrasives, gears, screws, threads, coating and finishing.

*Offered Spring Semester*

## Anthropology (See Sociology/Anthropology)

### Automotive Technology

#### **IA 110—GASOLINE ENGINE SYSTEMS**

3 credits

Classroom discussion of several engine supporting systems including cooling, lubrication, crankcase ventilation, oil filtration. Also covered are: spark plugs, distributors, ignition points, engine compression, vacuum, batteries, fuel pumps, and ex-

## AUTOMOTIVE TECHNOLOGY

haust systems. Laboratory exercises check, test and service these systems on live automobiles.

*Offered Fall Semester*

### **IA 120—DRIVE LINE & AIR CONDITIONING**

3 credits

The driveline component involves the function, construction operation, servicing and troubleshooting of automotive type clutch assemblies, standard transmissions, propeller shafts, universal joints and differentials. The air conditioning section involves the study of basic automotive air conditioning theory and fundamentals of operation, includes various types of systems used in modern automobiles, basic and advanced methods of troubleshooting, charging, purging, evacuation, electronic leak detection and the servicing of various components. Presented through lecture, demonstration and practical laboratory exercises.

*Offered Fall Semester*

### **IA 210—GASOLINE ENGINES SERVICE**

3 credits

A study involving the construction, operation, troubleshooting and overhaul techniques of modern gasoline engines. Includes valves and valve train components, pistons and piston connecting rod assemblies, crankshaft, cam-shaft, and related bearing assemblies. Laboratory assignments provide experience in disassembly and reassembly. Students make wear measurements and repair or adjustments according to factory recommended procedures and specifications.

*Offered Spring Semester*

### **IA 220—AUTOMATIC TRANSMISSIONS**

3 credits

Principles of operation, construction, servicing, and troubleshooting. Covers fluid couplings, planetary gears, hydraulic controls, seals and adjustments. Students participate in disassembly and reassembly of selected transmissions along with actual testing and service work in the school laboratory.

*Offered Fall Semester*

### **IA 310—FUEL & ELECTRIC SYSTEMS**

3 credits

Fundamentals of electricity and magnetism, testing and servicing of batteries, construction and use of meters, AC alternators, control units, and starting systems. Includes a study of carburetion principles, fuel-air ratio requirements, venturi principles and basic carburetor circuits. Students participate in disassembly and reassembly of components and perform required bench tests.

*Offered Fall Semester*

### **IA 330—BRAKES & SUSPENSION**

3 credits

Study of basic hydraulics, wheel and master cylinders, calipers, disc brakes, power units and system bleeding. Instruction in machining drums and discs are performed using modern service equipment. Study of steering geometry, linkage, suspension systems, springs, conventional and power steering adjustments and alignment service are done by the students using the latest equipment.

*Offered Fall Semester*

### **IA 420—ENGINE DIAGNOSIS & TUNE-UP**

3 credits

Covers theory of operation and testing of all components in the conventional and electronic-ignition system. A study of engine tune-up, exhaust emission devices, and diagnosis using modern test instruments, scopes and infrared exhaust analyzers. Students participate in bench work and actual service problems using the latest electronic devices and the dynamometer lab.

*Offered Spring Semester*

### **IA 430—ADVANCED AUTOMOTIVE SYSTEMS**

3 credits

A study of the most up-to-date systems used in today's automobiles. Emphasis will be placed on servicing and the diagnosis of such systems as automotive diesel powerplants, computer controlled emission devices, electronic fuel injection, turbocharged powerplants and variable displacement engines. Proper troubleshooting techniques will be demonstrated through the use of test equipment. **PREREQUISITE:** IA 310

*Offered Spring Semester*



## Bilingual Word Processing (Option to Executive Office Administration) (See Office Systems)

### Bio-Medical Instrumentation Technology

**EB 120—MEASURING PRINCIPLES 1**

3 credits

Transducers used for temperature, pressure and flow measurements are discussed along with related concepts in physics. Effort is concentrated on such topics as sensitivity, resolution, recordability, linearity and accuracy, with reference to the above transducers. Although not a prerequisite, knowledge of the algebra of linear equations, exponential functions, as well as elementary Trigonometry will be helpful.

*Offered Fall Semester*

**EB 230—MEASURING PRINCIPLES 2**

3 credits

This course is an extension of EB 120, Measuring Principles 1, where the interest is shifted to acoustical, optical, and radiological devices.

*Offered Spring Semester*

**EB 320—CALIBRATION & STANDARDIZATION**

2 credits

Calibration and standardization of instruments may constitute one of the most important duties of instrumentation technicians. Consequently, they should be well acquainted with the various types of standards and their applicability to the problem at hand. This course consists of laboratory work so that technicians may become acquainted with the various procedures through actual experience. In addition, organization of the National Bureau of Standards, basic units of measurements (SI) and reporting of calibration should be reviewed. PREREQUISITES: EB 120, EB 230

*Offered Fall Semester*

**EB 340—ELECTRONIC CIRCUITS**

3 credits

An extension and expansion of material covered in ET 220 Semiconductors I. This course will emphasize the laboratory demonstration and investigation of solid-state devices and circuit identification and troubleshooting. PREREQUISITES: ET 110, ET 210 and ET 220

*Offered Fall Semester*

**EB 410—BIO-MED ELECTRONIC SYSTEMS 392**

3 credits

In this course the circuitry of modern medical instrumentation will be investigated. These will include: cardiac monitors, defibrillators, safety test equipment, electro-surgical devices, anesthesia machines, and inhalation therapy equipment. Students will be required to troubleshoot and repair bugged equipment.

*Offered Spring Semester*

**EB 420—INSTRUMENTATION PROJECT**

2 credits

The student is to apply his developed theoretical and practical knowledge into the production of a project meeting course requirements. The student must select and develop an original project of his own choosing with complete paper and physical documentation as required by the project advisor. PREREQUISITE: Senior Standing.

*Offered Spring Semester*

**EB 430—CODES, LAWS AND SAFETY**

1 credit

The student is required to become aware of enforcing agencies and their software. He must know the intent and purpose of those standards. In addition, he must understand how to be in compliance with regulations. PREREQUISITE: Senior Standing.

*Offered Spring Semester*

## Biological Sciences

**MB 018—GENERAL BOTANY**

4 credits

A non-majors course which provides an overview of basic concepts of plant morphology and physiology, in addition to introducing students to the historical, ecological, economic and cultural importance of plants. PREREQUISITES: None

*Offered Spring Semester*

## **MB 089—MATH/SCIENCE WORKSHOP**

3 credits

The Math/Science Workshop is designed to develop the student's ability to integrate scientific methodology with mathematical processes. Gathering of scientific data, experimentation procedures, laboratory techniques, and the applied mathematical background necessary to perform the laboratory procedures will be incorporated into this eight-week program. The use of a mini-calculator is required in the workshop. The Math/Science Workshop consists of eight four-hour laboratory periods and eight four-hour math sessions. Testing, completion of assignments, regular attendance, and teacher evaluation are the criteria used in determining the student's progress and final grade. An additional aspect of the workshop is the availability of bilingual students for one-on-one tutoring with students for whom English is the second language.

## **MB 090—BASIC SCIENCE 3**

4 credits

Introduction to experimental biology, through interpretation of many simple experiments. Emphasis on development of the student's confidence, initiative and self-reliance. Survey of general biological principles, including modern genetics, ecology, evolution and human organ systems. The course serves as preparation for other college biology courses and is suitable for students who have taken no previous science. **PREREQUISITE:** MP 090.

*Offered Spring Semester*

## **MB 100—NATURAL HISTORY**

4 credits

This course is designed to provide a basic background in botany, zoology and ecology. Field studies and laboratory experiences are designed to help potential pre-school teachers develop programs for their classes.

## **MB 101—BIOLOGY OF MAN**

3 credits

This course is designed to meet the needs of the student who has no background in biological science. Basic biological concepts are presented with emphasis on the human body. This is a one-semester program and may be used for students who require 3 credit hours in a non laboratory science.

*Offered Spring Semester*

## **MB 102—PRINCIPLES OF BIOLOGY 1**

4 credits

Principles of Biology is an introductory course designed to meet the needs of the students who have no background in chemistry or biology. It is a two semester presentation of the basic concepts of life science for the transfer student who does not wish to major in science. The first semester provides an introduction to fundamental biological concepts including: the modern concept of life, the structure and function of cells, biochemistry, nutrition, and comparative human and animal anatomy and physiology. **NO PREREQUISITES.**

*Offered Fall & Spring Semester*

## **MB 103—BIOLOGIA EN ESPANOL 1**

4 credits

Este es un curso introductorio con el proposito de satisfacer las necesidades del estudiante que no tiene conocimientos en química y biología. La duración del curso es de dos semestres; de los conceptos básicos de la vida para el estudiante que no piensa concentrarse en las ciencias. El primer semestre provee un estudio de los diferentes fundamentos biológicos que incluyen: la teoría celular, el mantenimiento de las plantas y animales, evolución y diversidad en las diferentes formas de vida y la relaciones entre los organismos y su ambiente. Estos conceptos serán reforzados y complementados por las actividades en el laboratorio donde se investigará los procesos de la vida en las plantas y animales.

## **MB 104—HUMAN BIOLOGY 1**

4 credits

This course is an integration of anatomy, physiology and clinical laboratory procedures that will prepare medical assistants to aid the physician in his diagnosis and treatment of a patient's illness. A comprehensive study is made of the structure and function of the human body. The course emphasizes the study of cells and tissues as related to the skeletal, muscular, respiratory and circulatory systems. Clinical laboratory procedures stressed in Human Biology 1 and Human Biology 2 are: Hem-

atology, Simple Microbiology, Immunology, Urinalysis, and other routine chemical tests.

*Offered Fall Semester*

**MB 105—GENERAL ZOOLOGY**

4 credits

An introduction to animal biology. Major topics include: cell structure, function, the physiology, heredity, development, behavior, and evolution of animals, supplemented by laboratory examination of the anatomy of the major groups in the animal kingdom. No Prerequisites.

*Offered Fall Semester*

**MB 106—GENERAL BIOLOGY 1**

4 credits

Geared to the prospective science major, the first semester of this course focuses on a study of chemical and cellular similarities in living organisms emphasizing the basic unity of life. General morphology and physiology of plants and vertebrate and invertebrate animals are discussed with emphasis on the vascular plant and human organ systems. **PREREQUISITE:** Qualified science majors, allied health candidates, or permission of the instructor.

*Offered Fall Semester*

**MB 107—INDEPENDENT BIOLOGY STUDY 1**

4 credits

This course is designed for highly motivated prospective science majors. Attendance in the regular MB 106 lecture will be required. A three-hour lab discussion session will be required as well. **PREREQUISITE:** Permission of Department Chairman.

*Offered Fall & Spring Semester*

**MB 109—BIOLOGY OF MAN**

3 credits

This course is designed to meet the needs of the student who has no background in biological science. Basic biological concepts are presented with emphasis on the human body. This is a one-semester course, restricted to Spanish-speaking students, for those who require 3 credit hours in a non-laboratory science.

**MB 113—MAN AND HIS ENVIRONMENT**

4 credits

Man and His Environment is a four credit lab course designed to meet the needs of the non-science major. Presupposing no background in science, it focuses on man's interdependence with nature. The first half of the course emphasizes major principles of ecosystems while the second half deals with the entire spectrum of environmental problems affecting man and the possible solutions to them. **PREREQUISITES:** None

*Offered Spring Semester*

**MB 120—ENVIRONMENTAL MICROBIOLOGY**

3 credits

A general investigation of microbial structure, growth, and physiology. Particular attention is paid to the roles microorganisms play in aquatic environments. **PREREQUISITES:** Chemistry 1 (MC 100) or Chemistry 11 (MC 102)

**MB 121—MICROBIOLOGY**

4 credits

A basic study of microorganisms, their activities, destruction and control. The concepts of infection, immunity & hypersensitivity precede the survey of the microbiology of major infectious diseases. **PREREQUISITES:** High School Chemistry & Biology.

*Offered Fall & Spring Semester*

**MB 132—ANATOMY & PHYSIOLOGY 1**

4 credits

A comprehensive study of the structure and function of the human body, emphasizing the normal which will serve as a background for the application of scientific principles both in everyday life and in the work of various health disciplines. Laboratory practice includes the study of tissues by using microscopic examinations and the dissection of animal specimens, along with physiological experimentation. Units covered are concerned with general introductory material, the skeleton, muscles and the nervous system. **PREREQUISITES:** Biology and Chemistry.

*Offered Fall Semester*



## BIOLOGICAL SCIENCES

### **MB 133—ANATOMY & PHYSIOLOGY/MLT**

4 credits

A series of lectures and laboratory experiences designed to provide students with a general understanding of the structure of the human body with emphasis placed on major physiological principles. Three lecture hours and one three-hour laboratory. **PREREQUISITES:** Biology and Chemistry.

*Offered Fall Semester*

### **MB 136—APPLIED PHYSIOLOGY**

4 credits

This course takes various concepts in human physiology and by a lecture-laboratory approach the physiological principles are explained and illustrated by laboratory experience and clinically oriented tests. The instrumentation and methodology used in studying physiology and making clinical evaluation are emphasized. Aspects of the cardiovascular, respiratory, excretory, immune and nervous systems are investigated in this course. **PREREQUISITES:** Biology (MB 102, MB 202) & Chemistry (MC 100).

*Offered Spring Semester*

### **MB 138—HUMAN ANATOMY 1**

4 credits

This is a course requiring no prior biological background. The organization of the human body from the cellular level to the various organ systems is included. Consideration of the pathological process in the human is integrated into the discussion of each organ system. This course combines lectures and appropriate demonstrations of physiological function. The first semester will include a consideration of cells and tissue and an emphasis on the regulatory systems of the body with particular emphasis on the nervous system. Laboratory skills are stressed.

*Offered Fall Semester*

### **MB 140—BIOCHEMISTRY FOR HEALTH SCIENCES**

3 Credits

An introduction to biochemical principles. Emphasis is on the major metabolic pathways, the mechanisms of enzyme action, bioenergetics and the role of hormones and other regulatory substances. **PREREQUISITES:** General Biology, or Anatomy & Physiology, General Chemistry or permission of the instructor.

*Offered Fall Semester*

### **MB 142—INTRODUCTORY NUTRITION**

3 credits

Application of nutrition principles in the planning, selection and preparation of foods to meet one's physical, social and economic needs. Discussion of current issues such as vegetarianism, health foods, fad diets, weight control, food additives/preservatives, nutrition labeling, stretching the food dollar, and safe food handling will be presented. **PREREQUISITES:** None.

*Offered Spring Semester*

### **MB 202—PRINCIPLES OF BIOLOGY 2**

4 credits

This course is a continuation of Principles of Biology 1 in which the following topics will be discussed: plant structure and function, sexual and asexual reproduction, the principles of heredity, evolution and diversity, and ecological relationships. **PREREQUISITE:** MB 102 Principles of Biology 1.

*Offered Fall & Spring Semester*

### **MB 203—BIOLOGIA EN ESPANOL 2**

4 credits

El segundo semestre es un analisis a fondo de los conceptos presentados durante el primer semestre. Algunos de los conceptos estudiados en el primer semestre seran expandidos de manera de tener un mejor conocimiento de las funciones del cuerpo humano y de la interrelacion del hombre con su ambiente. Ciertos conceptos seran expandidos para asi tener un mejor entendimiento del enforque celular de la biologia moderna. Otros conceptos presentados seran examinados a un nivel molecular. Topicos que se incluiran durante el segundo semestre: bioquimica, anatomia humana y fisiologia, reproduccion y desarrollo genetica moderna, evolucion moderna y ecologia.

### **MB 204—HUMAN BIOLOGY 2**

4 credits

This is a continuation of Human Biology 1. The program includes the nervous, endocrine, digestive, and genito-urinary systems and their relationships to total body organization. **PREREQUISITE:** HUMAN BIOLOGY 1 (MB 104).

*Offered Spring Semester*



## **MB 206—GENERAL BIOLOGY 2**

4 credits

Modern concepts in animal behavior, genetics, population biology and ecology and evolution are discussed. A survey of plant and animal kingdoms emphasizes diversity, similarities and possible evolutionary patterns. **PREREQUISITE:** General Biology 1 (MB 106).

*Offered Spring Semester*

## **MB 207—INDEPENDENT BIOLOGY STUDY 2**

4 credits

A continuation of MB 107. Attendance in regular MB 206 lectures is required. **PREREQUISITE:** MB 107 & permission of Department Chairman.

*Offered Fall & Spring Semester*

## **MB 232—ANATOMY & PHYSIOLOGY 2**

4 credits

A continuation of Anatomy & Physiology 1 concentrating on body metabolism, reproduction and endocrine control. Laboratory sessions are included. Emphasis is placed on association, correlation, critical thinking and overview of the body as a whole. **PREREQUISITE:** Anatomy & Physiology 1 (MB 132).

*Offered Spring Semester*

## **MB 238—HUMAN ANATOMY 2**

4 credits

The second semester is a continuation of MB 131 and will include a consideration of the cardiovascular, respiratory, digestive, urinary and reproductive systems. **PREREQUISITES:** Human Anatomy 1 (MB 138).

*Offered Spring Semester*

## **MB 320—HISTOLOGY**

4 credits

A study of the microscopic anatomy of cells, tissues, and organs as related to function. Emphasis is on mammalian systems. Discussion of microtechnique, electrophotomicroscopy, and tissue culturing will be introduced. **PREREQUISITES:** Biology (MB 106, MB 206); or Anatomy & Physiology (MB 132, MB 232); or Human Biology (MB 104, MB 204); or permission of instructor.

*Offered Fall Semester*

## **MB 350—EMBRYOLOGY**

4 credits

This course will expose the student to the fundamental growth processes and mechanisms that govern normal growth and development in the chick and pig embryos. Emphasis will be placed on the development of major organs and organ systems and how these systems develop into normal adult structures. Laboratory experiments, models and slides will be used to reinforce the basic principle of normal development and thus provide a basis for the discussion of abnormal development. **PREREQUISITES:** Biology (MB 106, MB 206); or Biology (MB 102, MB 202); or Anatomy & Physiology (MB 132, MB 232); or permission of instructor.

*Offered Spring Semester*

## **MB 360—GENETICS**

4 credits

An introduction to the principles of classical and biochemical genetics, surveying microbial genetics, population genetics and human heredity. Laboratory experiments are designed to demonstrate the major principles discussed in lecture. **PREREQUISITE:** General Biology, Anatomy & Physiology, General Chemistry or permission of instructor.

*Offered Spring Semester*

# Business Administration

## ACCOUNTING

### **BA 110—ACCOUNTING 1**

4 credits

An introductory course designed to present to the student the concepts and principles of accounting. Major emphasis is placed upon the recording, classifying and summarizing of the financial data generated within a service or merchandise sole proprietorship business, with limited exposure given to the corporate structured

## BUSINESS ADMINISTRATION

firm. Additional topics such as specialized journals, payroll, cash controls, voucher systems, notes receivables, notes payable, accounts receivable and bad debts, inventories and property, plant and equipment are examined.

*Offered Fall & Spring Semester*

### **BA 210—ACCOUNTING 2**

4 credits

This course is designed to complete the student's coverage of the fundamental principles of accounting. The course covers the accounting for and reporting of financial information for the partnership and corporate forms of organization (sole proprietorship was emphasized in Accounting 1). Corporate capital structure, bonds payable, temporary and long term investments are examined in detail. The preparation of the "Statement of Changes in Financial Position" is explored as well as price level adjustments and the analysis and interpretation of financial statements. The accounting for manufacturing concerns under the job order and process cost accumulation methods are examined. PREREQUISITE: BA 110

*Offered Fall & Spring Semester*

### **BA 310—INTERMEDIATE ACCOUNTING 1**

3 credits

This course is designed to provide the student with a comprehensive study of the generally accepted accounting principles and a thorough knowledge of the preparation as to form and content of the general purpose financial statements. The nature, importance, recording procedures and presentation of the following specific balance sheet accounts are systematically examined: cash, accounts receivable, marketable securities, inventories and accounts payable. Due to the complexities of this course, four classroom hours are required to present the material. PREREQUISITE: BA 210

*Offered Fall Semester*

### **BA 311—COST ACCOUNTING**

3 credits

This course provides an overview of the nature and purposes of cost accounting. Topics covered include cost concepts, manufacturing financial statements, job cost and process cost accumulation methods, material labor and overhead planning and control procedures, standard cost accounting system, master budgeting, cost-volume profit analysis and capital budgeting. Due to the complexities of this course, four classroom hours are required to present the material. PREREQUISITE: BA 210.

*Offered Fall Semester*

### **BA 312—MANAGERIAL ACCOUNTING**

3 credits

An introduction to the internal uses of accounting for management planning and control. The point of view will be on the use rather than the construction of accounting data. Areas of study include cost concepts and techniques, cost-volume-profit analysis, segment margin techniques, relevant costs and pricing decisions, standard costing, master and capital budgeting. PREREQUISITE: BA 210

*Offered Fall Semester*

### **BA 313—INTRO. TO FEDERAL INCOME TAXES**

3 credits

This course presents a comprehensive explanation of the Federal structure and the accepted practice used in applying tax principles in specific areas as they relate to the preparation of returns involving individuals; Massachusetts income taxes as they affect individuals are also reviewed. PREREQUISITES: BA 210.

*Offered Spring Semester*

### **BA 314—SMALL BUSINESS PLANNING, CONTROL AND FINANCING**

3 credits

This course covers the procedures and techniques of accounting analysis applicable to the managerial functions of credit and collection, cash budgeting planning and control. The student will also be required to evaluate the different methods and costs of obtaining capital, culminating in the formulation of a complete proposal package for a small business of his choice. PREREQUISITE: BA 210

*Offered Fall Semester*

### **BA 410—INTERMEDIATE ACCOUNTING 2**

3 Credits

This course provides a further examination of the nature, importance, recording procedures and presentation of balance sheet items initiated in Intermediate 1. The areas of plant assets, long term liabilities, investments, and corporation equity ac-



counts are all covered in detail. Specialized accounting methods for pensions, leases and price level adjustments are examined. Time permitting, the funds flow statements and special error correction techniques will be covered. Due to the complexities of this course, four classroom hours are required to present the material. **PREREQUISITE:** BA 310.

*Offered Spring Semester*

**BA 412—ADVANCED COST ACCOUNTING**

3 credits

A continuation of BA 311. Includes the study of process costing, standard costing, gross profit analysis, profitability analysis, break-even and cost-volume analysis, differential cost analysis, capital budgeting, product pricing and linear program. **PREREQUISITE:** BA 311.

*Offered Continuing Education*

**BA 413—FEDERAL INCOME TAX 2**

3 credits

This course presents a continuation of introduction to Federal Income Tax 1. It presents a comprehensive explanation of the Federal Income Tax laws as they affect partnerships, corporations, estates, gifts, and trusts. **PREREQUISITE:** BA 313

*Offered Continuing Education*

**BA 417—GOVERNMENTAL AND FUND ACCOUNTING**

3 credits

Specialized area of accounting developed in answer to the specialized needs of non-profit organizations. Covers principles of fund accounting as applied to governmental institutions and hospitals. Particular emphasis on accounting for municipal governments. **PREREQUISITE:** BA 210.

*Offered Continuing Education*

**BA 418—AUDITING**

3 credits

The philosophy of the auditing process and its applications. Preparation of audit work papers. Auditor's reports, opinions, and significance to various interested parties. Internal auditing procedures. Development of audit programs, generally accepted auditing procedures; review of internal control systems. Particular emphasis on professional ethics and legal responsibilities of the auditor; auditing of EDP systems. **PREREQUISITE:** BA 310.

*Offered Continuing Education*

**BP 101—OFFICE ACCOUNTING 1**

3 credits

An introductory course covering the basic structure, concepts and principles of accounting. Emphasis is placed upon the daily record keeping, classification and summarization of the financial information which flows within a business enterprise. The accounting cycle including statement presentation is examined along with such areas as cash, receivables, payables, payroll and taxes. (This course is restricted to the secretarial, administrative bookkeeper, or technology students.) Transfer students should be taking BA 110.

*Offered Fall Semester*

**BP 103—MEDICAL OFFICE ACCOUNTING**

3 credits

An introductory course covering the basic structure, concepts and principles of accounting. Emphasis is placed upon the daily record keeping, classification and summarization of financial information which flows within a medical office. The accounting cycle, including statement presentation, is examined along with additional financial topics such as cash control, receivables, payables, payroll and payroll taxes. Additional topics include professional fees and patient's credit, billing and collections, computerized billing as well as alternative accounting systems such as single entry and pegboard methods. A survey of management responsibilities is discussed along with the assigning and completing of a medical office accounting practice set. A definite effort is made to correlate the work to that of a medical situation. (The course is restricted to the medical secretarial students).

*Offered Spring Semester*

**BP 106—MEDICAL ASSISTANT RECORDKEEPING**

1 credit

The course exposes the medical assistant to the basics of medical office record-keeping. A brief survey on the methods and procedures of billing, banking, book-keeping and payroll will be presented.

*Offered Spring Semester*

## BUSINESS ADMINISTRATION

### **BP 202—OFFICE ACCOUNTING 2**

3 credits

The course expands upon the fundamentals learned in College Accounting 1 and examines the role of accounting in the various types of business enterprises, focusing on merchandising. Records maintained on the accrual basis, accounting for long-term debts, investments and deferred and payable items are mastered and integrated with the complete accounting cycle. **PREREQUISITE:** BP 101 or equivalent. (This course is restricted to the secretarial or administrative bookkeeper students. Transfer students should be taking BA 210.)

*Offered Spring Semester*

Courses will be offered subject to sufficient enrollment.

## FINANCE

### **BF 110—INTRODUCTION TO FINANCE**

3 credits

This course is designed to acquaint the student with the manner in which the financial system functions and with the techniques used to reach financial decisions. Major topics to be studied include the nature of money and financial institutions, central banking, securities markets, managing and financing of organizational assets. Special emphasis is given to financial decision-making.

*Offered Fall and Spring Semester*

### **BF 111—PRINCIPLES OF BANKING**

3 credits

This course is designed to acquaint the student with the basic principles underlying the major objectives of banking operation, the social and economic responsibilities of the bank in the community, the several relationships between a bank and its depositors and an examination of the expanding range of banking services.

*Offered Continuing Education*

### **BF 310—MONEY AND BANKING**

3 credits

The changing nature and functions of money are studied in considerable detail. The role of the banking system as a creator of money and credit and of the Federal Reserve System as regulator of the supply of money and credit is analyzed. The course includes an extensive study of non-bank financial intermediaries. A macroeconomic model is developed within which the relative efficiency of monetary and fiscal policy is examined. **PREREQUISITE:** BF 110.

*Offered Fall Semester*

### **BF 312—CREDIT MANAGEMENT**

3 credits

This course provides an examination and analysis of credit as a business instrument in the contemporary environment. Stress is placed on the functions of the credit analyst and credit manager. Included in these are the analysis of credit markets, the study of credit instruments and the determination of credit worthiness. **PREREQUISITE:** BF 110, BA 210.

*Offered Continuing Education*

### **BF 313—PERSONAL FINANCIAL PLANNING**

3 credits

This course is designed to provide the student with an analysis of the various components making up the financial plan. From this basis, the various products available are examined in depth. These include the various types of insurance including Life, Accident and Health, Property, Liability and Disability Income. Annuities are also included within this section. In addition, various investments available are discussed. These include savings, stocks, bonds, mutual funds, tax-sheltered investments and commodities. Interwoven throughout these discussions is the potential impact these investments have on an individual's federal income tax. The last major areas to be investigated are those of estate analysis and retirement planning. Alternative ways to handling these areas are presented and discussed.

*Offered Continuing Education*

### **BF 314—TRUST FUNDS AND SERVICES**

3 credits

This course introduces students to the organizational structure of a trust department and its wide variety of services. Personal trust, insurance trust, corporate and employee trust and community and institutional trust are examined. The course inquires



into the administration of these various trusts and analyzes the legal aspects and problems of property rates, wills and the settlement of estates. The historical background of trust and institutions is treated. **PREREQUISITE:** BF 111.

*Offered Continuing Education*

## **BF 410—INVESTMENTS**

3 credits

This is a beginning course in investment management with special emphasis on the principles governing individual and institutional investment programs. Topics covered include the mechanics of investment, investment media, securities analysis and portfolio management. **PREREQUISITE:** BF 110.

*Offered Spring Semester*

## **BF 411—MANAGERIAL FINANCE**

3 credits

The principle focus of Managerial Finance is on decisions and actions that are undertaken in light of the firm's objectives. Certain key concepts and commonly used tools of financial analysis are developed. Included are such topics as ratio analysis, sources and the use of funds analysis and financial control techniques. This material provides a useful overview of finance, and the ideas and terminology developed here facilitate an understanding of all the other parts of the course. Topics to be covered include decisions involving working capital, long-term assets, sources and forms of long-term financing, financial structure and leverage and cost of capital calculations. **PREREQUISITES:** BF 110, BA 210.

*Offered Spring Semester*

## **BF 412—FINANCIAL STATEMENT ANALYSIS**

3 credits

The evaluation of management's performance and the determination of the future condition of the firm is undertaken in this course. Balance sheet and income statement data provide the necessary information to evaluate and analyze the condition of the firm in terms of return on capital invested and use of working capital. The tools and techniques used in this course include ratios, sources and uses of funds analysis, cash flow projection and budgetary planning for current and future business operations. **PREREQUISITES:** BA 210.

*Offered Continuing Education*

## **BF 413—LOAN FINANCING & ADMINISTRATION**

3 credits

An investigation of the sources, costs and availability of funds for business and personal uses. The study stresses an analysis of short-term and long-term loans for business, including accounts receivable financing, consumer installment and mortgage credit. **PREREQUISITES:** BF 111 AND BA 210.

*Offered Continuing Education*

## **BF 414—BANK MANAGEMENT**

3 credits

This course analyzes the manner in which bank policy is formulated. It reviews the responsibility of management for organizational planning, personal placement and for control over specific bank activities. The role of management in the deposit function in the employment of bank funds, in loans and investments and the trust operations, is carefully examined. The course is chiefly concerned with the art of management. **PREREQUISITES:** BF 111, BA 210.

*Offered Continuing Education*

Courses will be offered subject to sufficient enrollment.

# BUSINESS LAW

## **BB 310—BUSINESS LAW 1**

3 credits

The primary purpose of a course in business law is to develop an understanding of the legal framework of business—the basic principles of law that apply to business transactions. Since the students of the course are not seeking training as lawyers, preventive law becomes an important objective. Emphasis is spent on contracts, agency, and employment.

*Offered Fall and Spring Semester*

## BUSINESS ADMINISTRATION

### **BB 311—BASIC LEGAL CONCEPTS**

1 credit

The course content is designed to acquaint medical personnel with various legal aspects germane to their profession, and with applying these principles to medical situations.

*Offered Fall and Spring Semesters*

### **BB 410—BUSINESS LAW 2**

3 credits

The purpose outlined in Business Law 1 is continued with emphasis upon personal property, bailments, the Law of Sales, commercial paper such as promissory notes, drafts and checks, real property arrangements such as Landlord & Tenant, Leases, Wills and Intestacy. **PREREQUISITE:** BB 310.

*Offered Fall and Spring Semester*

### **BB 411—INSURANCE LAW**

3 credits

The course is for the purpose of giving students an understanding of insurance and the manner in which the machinery of the law is used and useful for the regulation of business relationships and the enforcement of rights, especially in the business of insurance. Topics studied: insurable interest; making of the contract; premiums; ascertainment and control of risk; waiver and estoppel; construction of Fire, Liability, Life, Accident and Group contracts; and the legal doctrines and remedies common in insurance litigation. Special emphasis on the Law of Torts, under which liability for bodily injuries, damage to property and other kinds of injuries resulting from wrongful acts is created. Because of its importance in connection with Public Liability Insurance, special stress will be placed on the Law of Negligence. Other forms of torts will be considered and the extent to which they are or can be covered by Liability Insurance explained.

*Offered Continuing Education*

### **BB 412—SMALL BUSINESS LAW AND INSURANCE**

3 credits

This course is designed to familiarize the small business owner or his other professional staff with legal rights and responsibilities. Included is a realistic approach to the laws of sales, security devices, real property, government regulations and labor laws. In addition, the pros and cons of the various forms of legal organization and protection of intangibles are reviewed. Lastly, basic knowledge in insurance and tax liabilities is pursued.

*Offered Fall Semester*

### **BB 413—REAL ESTATE LAW**

3 credits

This course aims to acquaint the participant with the legal processes and instruments involved in real estate transactions; it does not attempt to supplant the services of the attorney. Included are titles, easements, deeds, contracts, agreements of sale, mortgages, foreclosures and redemptions, liens, wills and probate, tenant and landlord relations, leases and conveyancing. Public aspects of real estate business, such as construction and zoning laws, taxes and insurance are considered.

*Offered Continuing Education*

### **BP 312—MEDICAL LAW FOR HEALTH PERSONNEL**

3 credits

This course will cover the relationship between the Law and Society as primarily applicable to the practice of medicine. Discussions will cover the sources and type of law, authority and liability of medical and paramedical personnel and their licensure and registration. Medical ethics, confidentiality, insurance, informed consent and negligence will be considered along with torts, contracts and crimes.

*Offered Continuing Education*

Courses will be offered subject to sufficient enrollment.

## MANAGEMENT

### **BK 110—PRINCIPLES OF MANAGEMENT**

3 credits

This course provides the student with an introduction to the art and sciences of management. A detailed analysis is made of the planning, organizing, leading, and controlling functions. Particular emphasis is placed upon the decision-making process.

*Offered Fall and Spring Semester*

**BK 310—PERSONNEL MANAGEMENT**

3 credits

The primary aim of a course in personnel management is to provide an understanding of the role of the personnel department in the development and administration of the personnel program and the processes relating to it. Areas of study include the basic functions relating to the recruitment, selection, training, motivation, and remuneration of employees. PREREQUISITE: BK 110.

*Offered Fall Semester*

**BK 318—PRINCIPLES OF TRANSPORTATION 1**

3 credits

A general course in basic transportation principles. Emphasis on the history of transportation up to modern-day transportation. Some practical information necessary for the movement of goods. Discussions will include bills of lading, various freight terms, water transport, land transport with special emphasis on rail and truck transportation. PREREQUISITE: BK 110.

*Offered Continuing Education*

**BK 410—LABOR RELATIONS**

3 credits

This course is designed to expose the student to the philosophy, activities and objectives of the American labor movement. Areas of analysis include the history of unionism, labor legislation and the search for institutional security. Particular emphasis is given to the nature, content, negotiation, and administration of a collective bargaining agreement. PREREQUISITE: BK 110.

*Offered Spring Semester*

**BK 411—PRODUCTION MANAGEMENT**

3 credits

This is a practical course emphasizing the organization and operation of the production system. Included are capital equipment utilization, work measurement and methods analysis, cost, quality and production control, job evaluation and wage incentive systems. Consideration is given to the quantitative aspects of modern management and their value to the executive. PREREQUISITE: BK 110.

*Offered Spring Semester*

**BK 412—TECHNIQUES OF MANAGEMENT**

3 credits

Application of principles and analytical techniques for planning and control are presented within a problem solving context. Topics to be considered include decision theory, waiting line methods, linear programming, network programs, inventory models, and forecasting. In addition, participation in the management of a firm in a simulated industry is required. PREREQUISITES: BK 110, MM 122.

*Offered Spring Semester*

**BK 413—SUPERVISORY MANAGEMENT**

3 credits

A study of the skills and techniques needed to perform effectively supervisory work, especially those dealing with people and difficult work situations. More specifically, some of the skills covered are oral and written communication, leadership, grievances, training, rating, promotion, quality and quantity control and labor/management relations. PREREQUISITE: BK 110.

*Offered Continuing Education*

**BK 414—BUSINESS POLICIES**

3 credits

This course seeks to develop within the student an understanding of the overall administrative process through an integrating case-study approach. Particular emphasis is given to the role of planning and control in the functional areas of business management, i.e., production, marketing, and finance. PREREQUISITES: BK 110, BI 110, BA 210, BF 110.

*Offered Continuing Education*

**BK 415—PRODUCTION PLANNING AND CONTROL**

3 credits

Study of management controls as applied to production: the development of the functions of routing, scheduling, activating and monitoring; emphasizing production and material control systems, plant and equipment analysis and budgeting, quality control and inspection, statistical quality control, maintenance analysis and production efficiency. PREREQUISITE: BK 411.

*Offered Continuing Education*



## BUSINESS ADMINISTRATION

### **BK 416—WORK METHODS AND DESIGN**

3 credits

The study of the evolution of identifying, describing and analyzing the problem and the development of motion and time study. Topics covered include motion analysis and work simplification, theory and practice of time study, work performance evaluation and wage incentive, and the developing, selecting, installing of new methods. **PREREQUISITE:** BK 411.

*Offered Continuing Education*

### **BK 417—PURCHASING**

3 credits

This course is designed to introduce the student to the world of modern purchasing. An overview of purchasing management and organization along with policies and procedures is presented. The basic legal aspects of purchasing, purchasing ethics, sources of supply and value analysis are explored and presented for class discussion. Modern methods of purchasing are reviewed. **PREREQUISITE:** BK 110.

*Offered Continuing Education*

### **BK 418—PRINCIPLES OF TRANSPORTATION 2**

3 credits

A course designed to give those interested in a possible transportation career a working knowledge of traffic management and transportation sales, duties and responsibilities in various fields of transportation. Discussions will include terminal and special line-haul services, transportation costs, traffic management's role in decision-making. **PREREQUISITE:** BK 318.

*Offered Continuing Education*

### **BK 419—OFFICE MANAGEMENT AND CONTROL**

3 credits

This course exposes the student to the problems of the Office Manager, including the major ideas of what has to be done, how it is going to be done, and who is going to do it. In addition, a study of the control procedures on information and personnel is reviewed. **PREREQUISITE:** BK 110.

*Offered Continuing Education*

### **BK 420—SMALL BUSINESS MANAGEMENT**

3 credits

This course is designed to expose the student to the challenges of starting, operating and evaluating the effectiveness of the small business. Topics covered include the various forms of organization, financing, cost structure, location, sources of personnel, marketing and completion. **PREREQUISITES:** BA 210, BK 110.

*Offered Spring Semester*

### **BK 421—SMALL BUSINESS FORMATION**

3 credits

This course is designed to expose the non-business student to a practical discussion of the principles and problems of owning and operating a small business. The course will provide a step-by-step, no-nonsense,, "how to" approach in establishing a new business, as well as examining the basic operating problems faced by the small business manager in an ongoing business enterprise. The main objective of the course is to help the non-business student avoid some of the pitfalls of starting and operating a small business. **PREREQUISITES:** NONE (This course is restricted to the non-business student.)

*Offered Spring Semester*

Courses will be offered subject to sufficient enrollment.

## GENERAL BUSINESS

### **BP 110—PRINCIPLES OF REAL ESTATE**

3 credits

This course covers the basic laws and principles of Massachusetts Real Estate. It touches upon legal processes and instruments involved in real estate operation, titles, deeds, mortgages, liens, contracts and leases. It gives understanding, background and terminology necessary for advanced study in specialized courses. This could well assist those preparing for the license examination.

*Offered Continuing Education*



**BP 111—PRINCIPLES OF INSURANCE**

3 credits

The historical background, and developing and understanding the basic principles of insurance as well as the nature and operation of the insurance business. Emphasized given to the principles which underlie the entire field of insurance. Understanding is developed in the fundamental areas of indemnity, insurable interest, co-insurance, subrogation, proximate cause, other insurance, risk, requisites of insurable risk, deductibles, valued policies, probability and many others. The important functional areas of rating, underwriting, marketing and adjusting are considered as well as the subjects of regulation, reinsurance and company organization. The power and functions of insurance agents and brokers.

*Offered Continuing Education***BP 115—INTRODUCTION TO BUSINESS**

3 credits

The purpose of this course is to provide the non-business student with a general overview of business. The course is designed to acquaint the student with the basic departmental functions of business, emphasizing the manufacturing, financial, sales/marketing and management information systems areas. A further examination will be conducted stressing the interrelationships between these vital operating departments and the contributions that each provides towards the successful operation of the business. Close attention will be paid to the interdependence and competitive spirit, as well as the unique problems facing each segment.

*Offered Fall & Spring Semester***BP 321—PROPERTY INSURANCE**

3 credits

Emphasis is placed on understanding coverage, policy provisions and concepts common to property insurance. Contracts and forms studied include standard fire policy, extended coverage endorsement, dwelling and contents forms, building and contents forms, crime policy, business interruption forms, daily customer's policy and the property coverage provided by multiple-line contracts. PREREQUISITE: BP 111.

*Offered Continuing Education***BP 322—CASUALTY INSURANCE**

3 credits

Emphasis placed on understanding coverages, policy provisions and concepts peculiar to the common casualty, surety and multiple-line contracts. Contracts studied include the automobile policy, workmen's compensation and Employers Liability Policy, Owners', Landlords' and Tenants' Liability Policy, Comprehensive General Liability Policy, Comprehensive Personal Liability Coverage and the Liability Insurance aspects of modern multiple-line contract. PREREQUISITE: BP 111.

*Offered Continuing Education***BP 323—LIFE, ACCIDENT AND HEALTH INSURANCE**

3 credits

A basic course in the background and development of Life Insurance, its economic functions and its principles and practices. Consideration will be given to the history of Life Insurance, types of contracts, the functions of Life Insurance settlement options, special policies, mortality tables, the premium, the reserve surrender values, dividends, selection of risks, substandard insurance, participating and non-participating insurance, home office and agency organization, state supervision and regulation and other general aspects of the subject. PREREQUISITE: BP 111.

*Offered Continuing Education***BP 324—GROUP AND SOCIAL INSURANCE**

3 credits

Analysis of group insurance; including products, marketing, underwriting, reinsurance premiums, and reserves. Also, various governmental and private programs related to the economic problems of death, old age, unemployment and disability. PREREQUISITE: BP 111.

*Offered Continuing Education***BP 331—RESIDENTIAL APPRAISAL**

3 credits

This course covers the fundamentals of appraising as applied to residential properties. Included are purposes of appraisals, varying concepts of valuation, acquisition of data used for appraisals covering tables, techniques, special factors and final

estimates. Writing of reports and preparation of expert testimony. **PREREQUISITE:** BP 110.

*Offered Continuing Education*

### **BP 332—COMMERCIAL & INDUSTRIAL APPRAISAL**

3 credits

The principles covered in Residential Appraisal are applied to commercial and industrial properties. An analysis of business neighborhoods covering apartment buildings and hotels as well as all types of industrial and manufacturing properties is made. **PREREQUISITE:** BP 331.

*Offered Continuing Education*

### **BP 333—REAL ESTATE INVESTMENTS & FINANCING**

3 credits

Various opportunities and inherent problems in the investment in real estate are reviewed. In addition, the fundamentals of financing real estate are covered. Included are instruments of finance, particular applications to leases, bond issues, mortgage lending and income tax effects as a factor. Competing agencies of federal financing organizations and real estate brokers are reviewed. **PREREQUISITES:** BP 111, BP 110.

*Offered Continuing Education*

### **BP 334—REAL ESTATE MANAGEMENT**

3 credits

This course covers the real estate operator's functions in exchange and speculation in properties, financing and developing, whether he is running his own business or a department in a brokerage firm. Problems inherent in managing apartments and cooperative apartments are reviewed. **PREREQUISITE:** BP 110.

*Offered Continuing Education*

### **BP 341—SMALL BUSINESS PERSONNEL MANAGEMENT**

3 credits

The central theme of this course is the personnel responsibility and function of the small business manager. Full attention is devoted to the traditional personnel topics and functions including personnel policies, programs and methodologies; employee selection; training; labor relations; pay administration; employment laws; health and safety, benefits and services. In addition, realistic case problems are presented throughout the course. This will provide the students with an opportunity to apply theory, concepts and principles so that they can adapt their knowledge and skills to particular circumstances. **PREREQUISITE:** BK 110.

*Offered Fall Semester*

### **BP 342—SMALL BUSINESS PRACTICUM**

3 credits

The student applies knowledge obtained in previous courses to a real business situation. This is done by assigning a small group of students to a new or existing business that is in need of management consultation in the various problematic aspects of the business, including technical assistance in the development of a loan proposal, financial projections, and business planning. This course provides the student with the same valuable experience that co-op offers the students in other academic disciplines. **PREREQUISITES:** BP 112, BA 314, BP 341.

*Offered Spring Semester*

### **BP 343—SMALL BUSINESS SEMINAR**

3 credits

A variety of problems encountered by small business are discussed and evaluated in this course. The student must apply basic business concepts and tools acquired in previous courses to problematic situations presented by way of case studies and small business game simulation. Guest lecturers also will be brought in to discuss management problems and techniques for solving these problems, bringing to the class a different perspective and, it is hoped, fresh ideas. **PREREQUISITES:** BP 112, BP 314, BP 341.

*Offered Spring Semester*

### **BP 351—PRINCIPLES & DEVELOPMENT OF TOURISM 1**

3 credits

Introduces to the student the numerous aspects of tourism as related to recreational facilities, industrial development, historical points of interest, etc. Besides a study of domestic tourism and business travel, international topics such as documentation, health certificates, tourist cards, money exchange, will be treated.

*Offered Continuing Education*

**BP 352—PRINCIPLES & DEVELOPMENT OF TOURISM 2**

3 credits

An in-depth study of pricing, regulations, regulatory bodies governing travel and transportation. Scheduling and fare computation are discussed. **PREREQUISITE:** BP 351.

*Offered Continuing Education*

**BP 353—TRAVEL AGENCY OPERATION**

3 credits

The primary objective of this course is to analyze the steps required to staff and develop a functional and profitable agency. The student is exposed to a point-by-point analysis of various phases of Travel Agency Development, such as: location, interior layout and design; consumer responsibilities and office management techniques. **PREREQUISITE:** BP 352.

*Offered Continuing Education*

**BX 316—COLLECTIVE BARGAINING IN THE PUBLIC SECTOR**

3 credits

A brief overview of the legal and historical framework of collective bargaining followed by a detailed analysis of the process as it affects public employees. Special emphasis will be directed toward the Massachusetts statute and its application to various employee groups. **PREREQUISITE:** BK 110.

*Offered Continuing Education*

Courses will be offered subject to sufficient enrollment.

## MARKETING

**BI 110—PRINCIPLES OF MARKETING**

3 credits

This course emphasizes a well-rounded basic approach that provides maximum exposure to the role of marketing in today's economy which is a marketing economy—not just for marketers of conventional products and services, but also for government, social institutions and social causes and the professions. To achieve this exposure, an overview is presented of the marketing process including marketing research, consumer behavior, market segmentation, target consumers, product strategy, packaging, branding, pricing and the promotional mix. The course will service two types of students—those who want a knowledge of marketing fundamentals, principles and activities to meet specific personal or professional needs, and those who plan a career in marketing.

*Offered Fall and Spring Semester*

**BP 112—SMALL BUSINESS MARKETING**

3 credits

The various aspects of the marketing function tailored to the small business organization are presented in this course. This course is designed to teach students pricing and profit policies, advertising and promotional strategies, marketing research methods, sales forecasting and territorial structuring. Further exposure will be provided in budgetary and appropriate controls to ensure successful execution of strategies and tactics.

*Offered Fall Semester*

**BI 310—RETAILING**

3 credits

The major goals of the course are to enable the student to become a good retail planner and decision maker and to help focus on change and adaptation to change. The student will be introduced to the technical knowledge necessary for retail management. An overview of retailing is presented, including such vital areas as organizational structure, physical security, consumer behavior, personnel management, marketing research, merchandising, planning promotional activities, store planning and inventory control. **PREREQUISITE:** BI 110.

*Offered Fall Semester*

**BI 311—ADVERTISING AND PROMOTION**

3 credits

This course is designed to teach students advertising's fundamental principles and to familiarize them with its strategic, managerial, creative, and financial elements. The student will be exposed to developing advertising strategy, media strategy and



selection, creative strategy and execution, budgeting, and control, utilizing the case study method where feasible. PREREQUISITE: BI 110.

*Offered Fall Semester*

### **BI 313—CONSUMERISM**

3 credits

The development of an analytical structure within which the underlying issues facing the marketing profession are studied. The pre-purchase, purchase and post-purchase phases of a transaction receive detailed consideration in terms of the legal obligations of the buyer, the seller and the financier. Contemporary consumer concern with advertising, pricing and selling practices is examined along with legal requirements covering product safety, warranties, liability and consumer recourse. PREREQUISITE: BI 110.

*Offered Continuing Education*

### **BI 410—CONSUMER BEHAVIOR**

3 credits

The aim of this course is to understand why people buy as the foundation for developing concepts for meeting consumer needs through selling, advertising, distribution and related activities. Behavioral considerations affecting consumer purchase decisions are analyzed. These include the personality, motivational, cognitive and attitudinal aspects, along with the social influences which affect consumer interaction with business firms. PREREQUISITE: BI 110.

*Offered Spring Semester*

### **BI 411—SALES AND SALES MANAGEMENT**

3 credits

This course will introduce the student to the fields of sales and sales management. A comprehensive coverage of the tasks of the sales manager as organizer, administrator, and decision maker will be provided in a systematic manner. The most contemporary concepts in sales management as well as the more traditional practices will be explored by integrating both theory and practice. The sales portion of the course will present the theories, concepts, techniques and processes involved in selling. PREREQUISITE: BI 310

*Offered Spring Semester*

### **BI 412—MERCHANDISING**

3 credits

A study of the principles and procedures used in selection, promotion and selling of hard and soft goods merchandise in retail stores to develop an understanding of the major considerations of buying, inventory control, pricing and consumer buying motives. PREREQUISITE: BI 310.

*Offered Spring Semester*

### **BI 413—FASHION COLOR DESIGN & ANALYSIS**

3 credits

A study of the nature, source, characteristics, applications and uses of basic materials. The processes of manufacturing are reviewed. Current concepts of color and design are explored. Field trips are taken as well as sample materials brought into the classroom. PREREQUISITE: BI 412.

*Offered Continuing Education*

### **BI 414—FASHION COORDINATION**

3 credits

Involves the study of the principles, specialized fashion techniques and sources of information utilized by fashion directors and coordinators in wholesale and retail organizations. Workshops, projects such as fashion shows, fashion clinics, written and oral fashion reports and forecasts will be assigned. PREREQUISITE: BI 413.

*Offered Continuing Education*

Courses will be offered subject to sufficient enrollment.

## Chemistry

### **MC 100—CHEMISTRY 1**

4 credits

A study of the fundamental principles of chemistry in relation to the properties, composition and structure of matter. A primary aim of the course is to prepare students for subsequent courses in the technologies. Chemistry 1 is a one-semester



terminal chemistry course. Three one-hour lectures per week, one three-hour lab. **PREREQUISITE:** Concurrent Math MM 091 & MM 093 and one year of high school physical science or equivalent.

*Offered Fall and Spring Semester*

**MC 101—GENERAL CHEMISTRY 101**

4 credits

A one-year general chemistry course for students in the Health and Sciences and for transfer students who do not wish to major in a science or engineering. The first semester of the course will consist of a study of the general principles of inorganic chemistry, stressing concentration, dilution, equilibrium, and descriptive chemistry. Three one-hour lectures per week, one three-hour lab. **PREREQUISITE:** Math MM 091-MM 093 and one year of high school laboratory science or permission of instructor.

*Offered Fall Semester*

**MC 103—GENERAL CHEMISTRY 21**

4 credits

An introductory course in general chemistry designed to parallel the first year chemistry course offered at universities for science and engineering students. Modern theories of chemical reactions, chemical bonding, atomic and molecular structures are emphasized. Three one-hour lectures per week, one three-hour lab. **PREREQUISITES:** One year of high school physical science and math (MM 131) or equivalent.

*Offered Fall Semester*

**MC 107—FORENSIC SCIENCE**

3 credits

An introductory survey aimed at providing the student with a basic general understanding of the field of forensic science, including procedures commonly employed at a crime scene investigation as well as in the laboratory. In addition, this course is aimed at introducing the student to the application of various fields of science; e.g., medicine, pharmacy, chemistry, etc., for the purposes of obtaining admissible evidence for use in court trials. In general, the laboratory and scientific process as used in supporting the law enforcement function is examined. The lecture method is the primary source of instruction together with laboratory experimentation on a limited basis.

**MC 111-MC 118—GENERAL CHEMISTRY 21 & 22**

Offered Fall & Spring. One credit per module.

**MC 111—MODULE 1**

Units and conversions, atomic structure, atomic weight, mole concept, balancing equations, theoretical yields.

**MC 112—MODULE 2**

Gases, pressure, Boyle's, Charles', Guy Lussac's and Dalton's Laws, ideal and real gases, kinetic theory.

**MC 113—MODULE 3**

Periodic Table, electronic configuration of atom, quantum theory, bonding molecular geometry and bonding.

**MC 114—MODULE 4**

Physical properties in relation to structure, changes in states, solutions.

**MC 115—MODULE 5**

Equilibrium.

**MC 116—MODULE 6**

Thermodynamics and rates of reactions.

**MC 117—MODULE 7**

Acids and bases.

**MC 118—MODULE 8**

Oxidation, reduction, introduction to organic chemistry. **PREREQUISITES:** Same as Chemistry 21. Each module includes four laboratories which must be completed before the next module can be started.

## CHEMISTRY

### MC 140—SEMINARS IN APPLIED CHEMISTRY

1 credit

This course is a series of lectures by invited chemists practicing in non-academic laboratories. Sponsored jointly with the Cooperating Colleges of Greater Springfield.  
*Offered every other Spring Semester*

### MC 201—GENERAL CHEMISTRY 102

4 credits

The second semester will concentrate on organic & biochemistry. PREREQUISITE: General Chemistry 101 (MC 101). Three one-hour lectures per week, one three-hour lab.

*Offered Spring Semester*

### MC 203—GENERAL CHEMISTRY 22

4 credits

A continuation of Chemistry 21. Equilibrium, reaction rate, thermodynamics, acid/base and redox reactions are stressed. The student is also introduced to basic organic chemistry and quantitative analysis.

*Offered Spring Semester*

### MC 205—CHEMISTRY OF LITHOGRAPHY 2

4 credits

Topics in chemistry relating to the graphic arts including photography and photographic processes, colors, inks and printing. Laboratory.

*Offered Spring Semester*

### MC 208—INTRODUCTORY CHEMISTRY 2

4 credits

Acids-Bases, Redox reaction, solutions, organic, biochemistry and nuclear chemistry are discussed with emphasis on applications to vocational education. The laboratory will have further practical voc-ed applications. 3 hour lab.

This course is designed for use in the vocational educational grant. It will be taught to vocational education teachers in Continuing Education ONLY.

### MC 300—AUTOMOTIVE CHEMISTRY

4 credits

A study of specialized topics which are of particular interest to automotive technology. Topics covered are petroleum and how it is refined, gasoline, diesel fuel, gaseous fuels, atmospheric pollution, lubrication and lubricants, the chemistry of batteries, corrosion, hydraulic fluids and antifreeze compounds. The laboratory work consists of selected experiments with various small engines and oil and fuel testing apparatus. PREREQUISITE: Chemistry 1 (MC 200).

*Offered Spring Semester*

### MC 319—ORGANIC CHEMISTRY 1

3 credits

First semester of a one year organic chemistry course at the university level. This is the same course as MC 320 without the lab. Three one hour lectures per week. PREREQUISITE: MC 203 or permission of instructor.

### MC 320—ORGANIC CHEMISTRY 1

3 or 4 credits

A one-year course in organic chemistry at the university level. Reaction, synthesis and mechanism of organic reactions will be studied. This course is designed for transfer students with majors in chemistry, biology, pre-med or pre-dental. Three three-hour lectures per week, one four-hour lab per week. PREREQUISITE: Chemistry MC 203 or permission of instructor.

*Offered Fall Semester*

### MC 330—BIOCHEMISTRY

4 credits

A one-semester course in organic chemistry at the university level. Reaction, synthesis and mechanism are studied. This course is designed for transfer students with majors in chemistry, biology, pre-med or pre-dental. Three 3-hour lectures per week, one four-hour lab per week. PREREQUISITE: Chemistry 22 or permission of instructor.

*Offered Fall Semester*

### MC 350—INSTRUMENTAL ANALYSIS

4 credits

The theory and practice of modern analytical methods utilizing spectroscopic, chromatographic and colorimetric techniques will be stressed. The laboratory will include selected experiments having clinical and industrial relevance. PREREQUISITES: General Chemistry MC 203 or MC 201 or permission of instructor.

*Offered Fall Semester*

**MC 360—QUANTITATIVE ANALYSIS**

4 credits

An introductory course in quantitative methods of analysis. Gravimetric, laboratory volumetric and colorimetric methods will be used primarily. **PREREQUISITES:** Chemistry MC 203 and Math MM 131.

*Offered Fall Semester***MC 370—INDEPENDENT CHEMISTRY STUDY 1**

1, 2, 3, or 4 crs

Independent study of laboratory project in Chemistry under direction of an instructor. **PREREQUISITE:** Permission of the Department Chairperson.

*Offered Fall and Spring Semester***MC 419—ORGANIC CHEMISTRY 2**

3 credits

Second semester of a one year organic chemistry course at the university level. This is a continuance of MC 319. Three one hour lectures per week.

**MC 420—ORGANIC CHEMISTRY 2**

3 or 4 credits

A continuation of Organic Chemistry MC 320.

*Offered Spring Semester***MC 470—INDEPENDENT CHEMISTRY STUDY 2.**

1, 2, 3, or 4 crs.

A continuation of MC 370. **PREREQUISITE:** MC 370 and permission of Department Chairperson.

*Offered Fall and Spring Semester*

## Civil Engineering Technology

**GC 110—CONSTRUCTION MATERIALS**

2 credits

A comprehensive introduction to the many building materials is presented as they apply to the construction industry. Materials covered include wood, steel, non-ferrous metals, glass, paper, and plastics. Emphasis is placed on their physical properties, methods of production and their construction applications. Two lecture hours.

*Offered Fall Semester***GC 120—ARCHITECTURAL DESIGN & SPECIFICATIONS 1**

4 credits

An introduction to architectural and construction graphic techniques and written specifications. Emphasis is on residential and light commercial structures including site planning, floor plans, elevations, sections, isometrics, mechanical and electrical drawings and specifications, and blueprint readings. Two lecture and six lab hours.

*Offered Fall Semester***GC 130—CONSTRUCTION METHODS & EQUIPMENT**

3 credits

An introductory study of engineering fundamentals as applied to common construction equipment. Particular emphasis is placed upon the operating characteristics of and the production rates of power shovels, draglines, dozers, scrapers and other construction equipment. Also included is a study of the cost of owning and operating construction equipment. Several special construction methods are also discussed. Three lecture hours.

*Offered Fall Semester***GC 210—STATICS**

3 credits

A study of forces and force systems in equilibrium and their application to engineering materials. An analysis of the stresses and strains induced in various engineering materials and the corresponding behavioral changes in these materials. The application of forces on beams, columns, trusses and riveted and welded sections are studied in simple tension, compression, shear and bending. Preliminary beam and column design is also studied. Three lecture hours. **PREREQUISITE:** MM 101.

*Offered Spring Semester***GC 220—CONSTRUCTION ESTIMATING**

3 credits

An introduction to estimating and construction office practice to familiarize the student with the construction process as a whole; the ways in which contractors organize their offices to accomplish jobs in construction; the generation of plans and specifications and their use, systems of accounting; and how material quantity



"take-off" forms the basis for accounting. Two lecture hours and three laboratory hours.

*Offered Spring Semester*

## **GC 305—SURVEYING 721**

3 credits

A course teaching the basic surveying operations used in landscape work. The use of simple instruments such as tapes and hand levels is covered first, followed by study of transits and construction levels. Mapping and contour studies are carried out and the use of surveying in typical landscape operation is stressed.

*Offered Fall Semester*

## **GC 310— SURVEYING 1**

4 credits

The theory and practice of construction surveying. Field practice is given in the use of tape, transit and level and in data recording. Techniques of preparing working plans and maps from recorded data are developed making use of field notebooks. Two lecture hours and 6 lab hours.

*Offered Fall Semester*

## **GC 320—SOILS & FOUNDATIONS**

3 credits

Analysis of subsoil conditions, bearing capacity and settlement analysis, character of natural soil deposits, earth pressure and retaining wall theory, stability of slopes and subgrades, foundation types and construction methods, and structural design of foundation elements. Three lecture hours.

*Offered Fall Semester*

## **GC 330—STRUCTURES 1**

3 credits

A continuation of the stress and force theories from Statics GC 210 is presented as they apply to structural design. The design of structural steel floor, beam and column systems, including indeterminate structures, is studied in depth, with particular emphasis placed upon shearing, bending and deflection stresses induced on wood, steel, and aluminum load carrying members. The weekly 3-hour lab is devoted to practical design procedures and analysis of various structural members, especially beams, girders, columns, and footing through the solution of numerous problems. Two lecture hours and three lab hours. PREREQUISITE: GC 210.

*Offered Fall Semester*

## **GC 410—REINFORCED CONCRETE ANALYSIS**

3 credits

A continuation of the stress and force theories from Statics and Structures presented as they apply to the structural design using concrete as the structural material. The course starts with a detailed study of the manufacturing process of concrete and its constituents, and progresses through the design of reinforced concrete beam and floor systems plus retaining walls and foundation systems as permitted by the AIC code. Standard ASTM Concrete tests are explained and demonstrated. The weekly 3-hour lab is devoted to the design and analysis of reinforced concrete systems, including design drawings. Two lecture hours and three laboratory hours. PREREQUISITE: GC 210.

*Offered Spring Semester*

## **GC 420—CONSTRUCTION MANAGEMENT**

3 credits

A study of specialized business and management topics which are of particular interest to the construction industry. Topics include basic operational patterns, subcontracting procedures, purchasing and expediting, scheduling, change orders, accounting for materials and supplies, field labor methods, critical path method and legal matters. Three lecture hours.

*Offered Spring Semester*

## **GC 430—TRANSPORTATION 1**

4 credits

Problems in highway design and construction are covered, including roadway foundations, material properties of flexible and rigid pavements and pavement subgrade construction. In addition, railway layout and trackbed construction is covered. This course also makes a general survey of other modes of transportation, including mass transportation and air travel. Three lecture hours and three lab hours.

*Offered Spring Semester*



**GC 450—MATERIALS TESTING LAB**

2 credits

Classroom theory of soil mechanics and strength of materials is expanded through material testing experiments using laboratory equipment. In addition, field trips to major construction sites enable students to see current construction practices and techniques. One lecture and two laboratory hours.

*Offered Spring Semester*

## Clerical Office Assistant (See Office Systems)

## Computer Information Systems/Data Processing

**BD 099—COMPUTER LITERACY**

3 credits

A low level introduction to computers for those who wish to become familiar with computers. The course will cover large and medium mainframe computers as well as micro-computers. Insight is provided into the history of computers and their function and role in society and education. The course also offers discussion of hardware, software, computer languages and the use of computers in different professions along with sample applications and programs. **PREREQUISITE:** None.

*Offered Fall & Spring Semester***BD 101—COMPUTER CONCEPTS**

4 credits

This course provides the student with an understanding of computers and the role they play in today's society. The course covers in a general way the hardware and software which go into creating a computer system. The concepts of application programming are taught through the vehicle of BASIC, a procedural type of programming language. The student has an opportunity to design and write programs, then enter them into the college computer from Cathode Ray Tube terminals. **PREREQUISITE:** None.

*Offered Fall & Spring Semester***BD 102—COMPUTER PROGRAMMING - R.P.G. 2 and 3**

4 credits

Report Program Generator Levels Two and Three (R.P.G.) as applied to the computer is the main content of this course. This language is used on all business computers such as: IBM, Univac, Honeywell, Burroughs and NCR. Upon completion, the student will be able to write, assemble, and debug programs. Programs for billing, payroll, inventory control and accounts receivable will be written and tested using the Terminals in the Data Processing Laboratory. **PREREQUISITE:** BD 101.

*Offered Fall & Spring Semester***BD 104—PROGRAMMING LOGIC**

3 credits

Students will use the tools of the programmer to develop and test program specifications, VTOC's and detailed logic plans. Structured programs will be developed using flowcharts, HIPO charts, Nassi-Shneiderman charts and pseudo-code. The use of program building blocks and walkthroughs will be stressed. In other programming languages, students will spend more time developing and testing program logic and less time debugging programs. **PREREQUISITE:** None.

*Offered Fall & Spring Semester***BD 105—COMPUTER PROGRAMMING - PASCAL**

4 credits

PASCAL is one of the newer computer languages widely used in Europe. It is now becoming popular in this country mainly because it was specifically designed to incorporate the techniques of structured programming which are in great demand today. Students will be expected to design, code, debug, test and document PASCAL programs beginning with short and simple applications and continuing with those of increasing complexity. **PREREQUISITE:** None.

*Offered Fall & Spring Semester*

## **BD 107—BASIC**

4 credits

This course is designed to teach the proper and correct ways to design and write programs in the BASIC Computer Language. Emphasis will be on using only the three logic control structures found in structured programming: the sequence logic structure, the if-then-else logic structure, and the looping logic structure. The concepts taught in the course include basic input/output operations, basic arithmetic operations, accumulating and printing totals, comparing, array processing, searching and sorting. In addition, string/file processing and report generation. COREQUISITES: BD 101, BD 104.

*Offered Fall & Spring Semester*

## **BD 111—DATA ENTRY SKILLS**

2 credits

For this course, the student will be given a variety of data entry assignments which must be carried out in the Lab time. Many drills will be checked for speed and accuracy of entry. These drills will involve entering actual data through a variety of different means into the computer. The data will be used to create files, which will determine if the data was entered successfully.

*Offered Fall & Spring Semester*

## **BD 150—COMPUTER LITERACY AND BASIC PROGRAMMING**

4 credits

The course objective is to provide the necessary knowledge to those individuals whose work environment requires a familiarity with computers and a knowledge of how to program in the BASIC language. It will provide the individual with the necessary skills to function in today's computerized society.

*Offered Fall & Spring Semester*

## **BD 191—COMPUTERS IN HEALTH CARE**

1 credit

This course will assist the student to develop an understanding of the computer and beginning skills in the use of the CRT, by entering programs written in the BASIC Programming Language. PREREQUISITE: None.

*Offered Fall & Spring Semester*

## **BD 202—ADVANCED RPG 2 and 3**

4 credits

Upon completion, the student will be able to write programs using Tables, Arrays, and Subroutines. Also, the student will write disk and tape programs. The student will write various programs for these devices and they will be tested, assembled, and debugged in the Data Processing Laboratories. PREREQUISITE: BD 102.

## **BD 205—ADVANCED PASCAL**

4 credits

This course will develop the student's understanding of the more advanced techniques available to the user of a high level programming language. Areas such as multi-dimensional arrays, search and sorting algorithms, forward reference and recursive function calls and file handling capabilities will be explored. PREREQUISITE: PASCAL BD 105.

*Offered Spring Semester*

## **BD 210—SYSTEMS ANALYSIS & DESIGN 1**

3 credits

The purpose of this course is to teach the student how a system is designed. The course takes the student in detail through each phase of a system study. To further enhance the course, the student actually completes a systems project from preliminary investigation through implementation except for program writing. PREREQUISITE: BD 104.

*Offered Fall & Spring Semester*

## **BD 302—STRUCTURED COBOL**

4 credits

COBOL is a procedural-type language which has, over the past twenty years, been the most popular language for solving business problems. The course emphasizes structured programming techniques with its concentration on program design and program readability. The student will write and test a number of programs using the college computer. PREREQUISITE: BD 104.

*Offered Fall & Spring Semester*

**BD 305—ASSEMBLER LANGUAGE**

4 credits

Basic Assembler Language is a computer language directly related to computer machine language on a one for one basis. The assembly language used is the one available on both IBM and Univac equipment. Upon completion of this course, the student will be able to write, assemble and "debug" programs. Required for Computer Information Systems majors. PREREQUISITE: BD 104.

*Offered Fall & Spring Semester***BD 306—FORTRAN**

4 credits

FORTRAN (an acronym for formula translation) is one of the most widely used compiler languages available for use on many modern-day computers. This course is designed to teach the student how to write programs in the FORTRAN language so that he may utilize the computer as a tool to solve statistical and mathematical formulae. The course is recommended as an elective to Engineering Transfer students and to Computer Information Systems students with a good math background. Elective for Computer Information Systems majors. PREREQUISITE: BD 104.

*Offered Fall & Spring Semester***BD 312—OPERATING SYSTEMS AND DATA BASE**

3 credits

This course is intended to provide the student with knowledge in a number of areas not covered in other courses. Main emphasis is on the structure and use of an operating system and the development of a computerized data base. PREREQUISITES: BD 101, BD 210, BD 302.

*Offered Fall & Spring Semester***BD 402—ADVANCED STRUCTURED COBOL**

4 credits

Advanced COBOL coding techniques for tape and disk files are covered. Core-saving techniques and special features such as SORT verb and facility are included. Business-oriented applications will be discussed and programmed in detail. Upon completion of this course, the student will be qualified to design and program a typical business problem in COBOL. PREREQUISITES: BD 101 and BD 302.

*Offered Fall & Spring Semester***BD 405—ADVANCED ASSEMBLER LANGUAGE**

4 credits

This course may be taken as an elective for Computer Information Systems majors. It covers Binary Arithmetic, Table Handling, Branch on Count Operations and other Register Instruction. These instructions make assembler a very efficient tool for creating assembler sub-programs which are called by programs written in other languages. PREREQUISITES: BD 101 and BD 305.

*Offered Fall & Spring Semester***BD 410—SYSTEMS ANALYSIS & DESIGN 2**

3 credits

The students will develop special business systems including the necessary computer programs. Course flexibility is utilized to meet current demands of the computer industry and its changing techniques. PREREQUISITES: BD 101 and BD 302.

*Offered Fall & Spring Semester*

## Computer Maintenance Technology

**ED 240—INTRODUCTION TO COMPUTER ORGANIZATION AND PROGRAMMING**

2 credits

This course will introduce the student to the organization of modern day computers. The coverage will include computer data representation, survey of peripherals, and more programming with high level languages. The course will consist of both class and laboratory where the student will use the computer to solve problems related to the second semester work. Senior Standing.

*Offered Fall Semester***ED 330—MACHINE & ASSEMBLY LANGUAGE PROGRAMMING**

3 credits

Input/Output equipment, machine organization, logical design, elementary data structures and assembly language programming. Machine and assembly language for the PDT 11, a typical mini-computer, will be studied in detail and contrasted to other machines. Senior Standing.

*Offered Fall Semester*



# COMPUTER MAINTENANCE TECHNOLOGY

## **ED 350—DIGITAL ELECTRONICS LAB**

2 credits

This is a third semester course in the Computer Maintenance and Microprocessing Technology curriculum. The course deals with the practical aspects of logic system design and construction. Also covered are logic circuits, including gates, flip flop timers, registers and counters. Students will construct and troubleshoot circuits and write lab reports dealing with the concepts discussed in ET 340 or ED 240. **PREREQUISITE:** Senior standing in Computer Maintenance or Microprocessing Technology.

*Offered Fall Semester*

## **ED 410—ADVANCED DIGITAL ELECTRONICS LAB**

2 credits

This course is a continuation of ED 350 Digital Electronics Lab. The course deals with advanced logic systems concepts including arithmetic units, A/D and D/A converters, digital displays, microprocessor systems and interfacing microcomputer components. Students may build and program an 8085 based microcomputer system. **PREREQUISITES:** All third semester Computer Maintenance courses. Senior standing & ED 350.

*Offered Spring Semester*

## **ED 420—MICROPROCESSOR THEORY**

3 credits

The microprocessor in digital control systems, the substitution of software for hardware in logic design and the interface of the microprocessor with external devices. Architectural features of current microprocessors such as the Intel 8080 will be examined and a study of the device's applications will be undertaken. **PREREQUISITES:** Senior standing and ED 330, ED 350, and ET 340.

*Offered Spring Semester*

## **ED 450 —ADVANCED COMPUTER TOPICS**

3 credits

Advanced computer concepts are studied in this course. Mass memory devices are studied in detail and consideration is given to the various forms of magnetic recording techniques. Other input/output devices are examined. **PREREQUISITES:** Senior standing and ED 330, ED 350 and ET 340.

*Offered Spring Semester*

# Computer Science Transfer Option to Engineering & Science Transfer

## **MK 103—INTRODUCTION TO COMPUTER PROGRAMMING**

4 credits

The course provides a general understanding of the hardware and software which go into a computer system. Methods of problem solving and algorithm development will be discussed, using a modern computer language. The accepted techniques of structured programming in software design will be stressed. Extensive hands-on computer use involving program design, coding, entry, and debugging will be required.

## **MK 203—NON-NUMERICAL PROCESSING**

4 credits

The details of the PASCAL language are developed. The principles of good programming style and structure are stressed. Among the individual topics to be developed are: the theory of recursion, stack variable storage, dynamic variables, simple data structures such as linked lists, stacks, and queues, elementary string processing techniques, and internal searching/sort algorithms. **PREREQUISITE:** MK 103.

## **MK 310—MACHINE AND ASSEMBLY LANGUAGE**

4 credits

A study of data representation, instruction sets, and functional units found in typical computers is offered by this course. The focus of the investigation is on the 8085, 8086, and 8088 microprocessors. Topics to be developed are: number systems, register configuration, instruction sets, addressing modes, arithmetic operations, operations on data structures, and interrupt processing. A macro assembler will be used to code students' programs. The theory of macros, assemblers, program segmentation, and linkage will also be discussed. **PREREQUISITE:** MK 103.



**MK 320—COMPUTER ORGANIZATION & DIGITAL LOGIC**

3 credits

Introduction to the analysis and design of combinational and sequential logic using Boolean algebra, Karnaugh Maps, and register transfer techniques. Logic design with integrated circuits. Flip-flops, registers, memory, and input/output devices are among the devices to be discussed. **PREREQUISITE:** MK 103; **COREQUISITE:** MK 310.

**MK 401— DATA STRUCTURES AND ALGORITHMS**

4 credits

Analysis of algorithms that manipulate information organized in structures such as lists, trees, and graphs. Simple, circular, multilinked linked lists. Stacks and queues. Balancing algorithms for tree structures. Advanced search/sort techniques, hashing methods. Database management system design using the techniques discussed. **PREREQUISITE:** MK 203.

**MK 405—FILE PROCESSING**

3 credits

Concepts of structuring data on bulk storage devices such as disk drives and magnetic tape. Sequential file processing techniques, external sort/merge. Algorithms for implementing inverted lists, multilist, indexed sequential, and hierarchical file structures. Comparisons of existing data base management systems. **PREREQUISITE:** MK 203.

## Cosmetology

**AC 100—BEAUTY SALON MANAGEMENT**

3 credits

A basic course dealing with the fundamental principles and techniques underlying the managerial process in small business management. Topic includes: The Massachusetts Board of Cosmetology rules and regulations, marketing, advertising, record keeping, merchandise control, salon practices, telephone techniques, personnel management and business ethics. Case studies are a part of the course.

*Offered Fall Semester***AC 101—PRINCIPLES OF COSMETOLOGY THEORY**

3 credits

The cosmetologist must know how the body is constructed as a basis for the application and understanding of her/his art. This course includes the study of cells, bones, muscles, nerves, circulatory system, bacteriology, sterilization, sanitation, skin, hair, nails, and the theory of shampoos, rinses, scalp and hair conditions, hair coloring, cold waving, hair relaxing, thermal waving, arching, manicuring and massaging.

*Offered Fall Semester***AC 107—FUNDAMENTALS OF APPLIED COSMETOLOGY 1**

5 credits

For the first part the student learns the techniques and procedures of manicuring, arching, facials and makeup techniques together with pincurling as outlined by the Massachusetts Board of Registration of Cosmetologists. The student learns to use some of the elements of science in his/her practical work, to develop judgement in the use of tools, equipment and materials and to take precautions to safeguard his/her own health and that of his/her patrons through sanitation and sterilization. A passing grade of C is required in this course to qualify for Course AC 206.

*Offered Fall Semester***AC 108—FUNDAMENTALS OF APPLIED COSMETOLOGY 2**

5 credits

Another phase of work that requires the knowledge of techniques and procedures includes shampooing, scalp conditioning, coldwaving, hair cutting and blow drying. Mannequin heads are used for practice work. A passing grade of C is required to qualify for Course AC 207.

*Offered Fall Semester***AC 200—BASIC DERMATOLOGY**

3 credits

An introduction of cosmetic chemistry relating to skin, hair, and nails is necessary in manicuring, hair coloring, facials and makeup. Basic scientific coloring principles of biological, environmental and chemical effects on hair and skin are mastered. The student gains basic knowledge in recognizing disorders, diseases and abnormalities

## COSMETOLOGY

of the nails, skin, scalp and hair. A review of anatomy and physiology in preparation for the national examination in cosmetology is studied.

*Offered Spring Semester*

### **AC 206—SUPERVISED LAB PRACTICE 1**

5 credits

This course is a continuation of AC 107. Practical experience is gained as a result of students working on each other and patrons practicing the techniques learned during the first semester. In addition students learn the techniques of fingerwaving; the various types of facials for different skin conditions; and in-depth skin analysis. **PREREQUISITE:** AC 107.

*Offered Spring Semester*

### **AC 207—SUPERVISED LAB 2**

5 credits

This course is a continuation of AC 108. In this course the student learns the techniques in hair relaxing, hair coloring and hair styling. The student gains experience by working on patrons practicing the skills learned in the first semester. **PREREQUISITE:** AC 108.

*Offered Spring Semester*

## **Criminal Justice** **(See Law Enforcement/Criminal Justice)**

## **Data Processing** **(See Computer Information Systems/Data Processing)**

## **Dental Assistant**

### **AD 100—DENTAL ASSISTANT TECHNIQUES 1**

3 credits

This course is primarily designed to educate the student in the proper identification, care and use of all types of dental equipment and instruments. As the student progresses, he/she will have a working knowledge of tray set-ups and instrument sequencing for each dental procedure to enable the student to utilize 4-handed chair-side assisting effectively. Aseptic techniques, including an understanding of the principles of microbiology and sterilization are emphasized in this introductory course. In addition, dental terminology and charting procedures will be discussed.

*Offered Fall Semester*

### **AD 102—ORAL ANATOMY**

2 credits

Study of the anatomy, embryology and histology of oral structures with emphasis on deciduous and permanent dentitions including morphology, eruption, function and occlusions.

*Offered Fall Semester*

### **AD 103—DENTAL RADIOLOGY 1**

3 credits

This course is primarily designed to afford the student an opportunity to integrate the theoretical as well as the practical application of exposing, processing, mounting and interpreting full-mouth and bite-wing radiographs through the use of the bisecting and paralleling techniques. These goals are achieved through the utilization of simulated exercises and clinical practice which will aid the student in developing radiographic expertise. In addition, panoramic radiography will be discussed.

*Offered Fall Semester*

### **AD 104—DENTAL MATERIALS 1**

4 credits

The chemical, physical and manipulative properties of common materials used in dentistry are studied. Attempt is made to correlate the major specialties in dentistry. The role of the dental auxiliary in the manipulation and application of these materials is stressed.

*Offered Fall Semester*

**AD 105—DENTAL SCIENCES 1**

2 credits

This course is primarily designed to educate the student in all phases of diet, nutrition, and oral health. It is intended to familiarize the student with basic nutritional deficiencies and oral manifestations that the patient may experience as a result of his/her dietary habits. Also covered in the course are the principles of nutritional counseling. As the student progresses, he/she will have a working knowledge of the techniques of counseling patients according to their specific dietary and oral health needs. In addition, the various techniques of oral physiotherapy will be discussed.

*Offered Fall Semester***AD 200—DENTAL ASSISTANT TECHNIQUES 2**

3 credits

A continuation of first semester, this course seeks to advance the skill and dexterity of the student in all techniques. There is a coordination of activities in an effort to combine efficient chairside performance with general dental assisting tasks. Additionally, this course is designed to enhance the student's awareness of various employment opportunities that will be available upon graduation. To accomplish this goal, the student will pursue an in-depth study of the numerous dental specialties, including Periodontics, Orthodontics, Oral Surgery, and Endodontics, to name a few. With this knowledge, the student should be able to integrate effectively the theory of dental assisting with the practical application of all procedures. In order to educate the student as to his/her legal responsibilities to the dentist, the patient, and ultimately to the field of dental assisting, the student will also receive lectures on ethics and jurisprudence as they pertain to the practice of dentistry.

*Offered Spring Semester***AD 201—DENTAL SCIENCES 2**

3 credits

This course is designed to familiarize the student with the various tissue changes that may occur in the patient's oral cavity as a result of pathological and/or systematic conditions. Also included will be a study of medical emergencies and their respective first-aid treatment procedures. Specific types of pharmacological agents that are utilized in the dental office in order to alleviate pain, fear or enhance anesthesia as well as those agents which are prescribed to the patient to control systematic disease will be discussed. The student will be required to enroll in and pass a Certified Cardiopulmonary Resuscitation course which will be offered in conjunction with this area of study.

*Offered Spring Semester***AD 202—DENTAL RECORDS**

2 credits

This course is primarily designed for the dental assistant. Included will be basic business procedures which are essential to the effective management and control of the dental office. Business skills are reviewed and developed for practical application in the office. In addition, procedures in filing, banking, billing, managing the appointment book, organizing a preventive recall system, insurance, tax forms, and all types of financial transaction which might be found in the dental practice will be explored.

*Offered Spring Semester***AD 203—DENTAL RADIOLOGY 2**

1 credit

A continuation of the first semester, this laboratory course enables the student to further enhance his/her skills in the techniques of radiographs through the utilization of the bisecting and paralleling techniques. These goals are achieved through the use of simulated exercises and clinical practice on patients which will aid the student in developing radiographic expertise within the dental office.

*Offered Spring Semester***AD 204—CLINICAL AFFILIATION**

5 credits

Since the College does not have a dental school with which to affiliate, this portion of the student's training is accomplished through the continued interest and cooperation of our area dental society. At this time, the student should be able to expand



## DENTAL ASSISTANT

his/her dental assisting education and to improve his/her chairside skills under the direct supervision of dentists and auxiliary personnel.

*Offered Spring Semester*

### **AD 205 —SEMINAR IN DENTAL ASSISTANT**

1 credit

This course is taught in conjunction with clinical affiliation. It is designed to further enhance the student's knowledge of various dental specialties that are within the realm of dentistry. In order to achieve this goal, the instructor will schedule guest speakers from the dental community to lecture to the students in their area of expertise. During the semester, the students will be afforded the opportunity to prepare an oral hygiene program and present their information to youngsters who are enrolled in various grammar schools throughout the Western Massachusetts area.

*Offered Spring Semester*

## Dental Hygiene

### **AH 100—ORAL ANATOMY 1**

3 credits

This course is designed to familiarize the dental hygiene student with the anatomical components and functions of the teeth and supporting structures. Soft tissue landmarks of the oral cavity, dental terminology, and occlusion will be studied. Students will demonstrate manual dexterity and knowledge of anatomy by completion of wax carvings of selected teeth.

*Offered Fall Semester*

### **AH 101—CLINICAL PRACTICE 1**

4 credits

Lectures and preclinical laboratory sessions are presented to introduce the etiology and prevention of dental diseases, normal oral conditions and common deviations, theory and practice in specific clinical techniques in the practice of dental hygiene. Students must pass both laboratory and theoretical components of the course in order to continue in the program.

*Offered Fall Semester*

### **AH 102—DENTAL RADIOLOGY**

2 credits

A survey of dental radiology, this course includes the theoretical background of techniques of exposure, processing, recognition of dental structures and principles of radiographic interpretation. Panoramic radiography is introduced. Students must pass both theoretical and laboratory components of the course in order to continue in the program.

*Offered Fall Semester*

### **AH 200—NUTRITION**

2 credits

Basic principles and concepts of nutrition studied with emphasis on relation to oral health, caries control and general health. Orientation to counseling techniques for diet modification in the practice of preventive dentistry. **PREREQUISITE:** MB 140.

*Offered Spring Semester*

### **AH 201—ORAL PATHOLOGY**

2 credits

Introduction to the basic principles of disease pertaining to the head and oral structures will provide the background for recognition of such diseases within the scope of the dental hygienist's practice and responsibility.

*Offered Spring Semester*

### **AH 202—CLINICAL PRACTICE 2**

5 credits

A continuation of Clinical Practice 1 with supervised clinical experience. The student will be introduced to advanced dental hygiene theory with special emphasis on the principles, procedures and techniques applicable for the care of patients with special oral or general health problems. The student will be assisted to develop mental processes necessary to collect, analyze patient information, identify patient problems and thereby render improved dental hygiene services. Students must pass both the clinical and theoretical components of the course in order to continue in the program. **PREREQUISITES:** AH 101, AH 100.

*Offered Spring Semester*



**AH 203— ORAL ANATOMY 2**

2 credits

A continuation of Oral Anatomy AH 100, with emphasis on the embryology and histology of the maxillofacial area and dental structures. Attention will be given to skeletal structure, muscle function, blood supply, and innervation of the maxillofacial region. **PREREQUISITES:** AH 100, MB 132.

*Offered Spring Semester***AH 300—PERIODONTOLOGY**

2 credits

This course is an introduction to periodontology, covering etiology, prognosis and treatment of the periodontally involved patient. Techniques of history taking and oral inspection will be discussed. The role of the dental hygienist in patient education and preventive dentistry will be stressed. **PREREQUISITES:** AH 100, AH 101.

*Offered Fall Semester***AH 301—DENTAL MATERIALS 1**

3 credits

The chemical and physical properties of common materials used in dentistry are studied. Attempt is made to correlate the various materials to the principles and practices of the major specialties in dentistry. The role of the dental auxiliary in the manipulation and application of these materials is stressed.

*Offered Fall Semester***AH 302—PHARMACOLOGY**

2 credits

Study of drugs and their effects on living tissues. Emphasis will be placed on the drugs which are utilized in dentistry. Dosage, physical and chemical properties and modes of administration will be considered. **PREREQUISITES:** MB 140, AH 203.

*Offered Fall Semester***AH 303—CLINICAL PRACTICE 3**

6 credits

A course designed to enhance the comprehension of dental hygiene services and to apply basic sciences to the practice of dental hygiene. The students will learn to expand upon their basic skills in areas such as radiographic interpretation, restoration, recontouring and polishing, recognition and charting of periodontal diseases, patient motivation, advanced hand instrumentation, and various sharpening techniques. The application of the theoretical background to the clinical techniques will enable students to provide better total patient care. Students must pass the clinical and theoretical components of the course in order to continue in the program. **PREREQUISITE:** AH 202.

*Offered Fall Semester***AH 400—COMMUNITY DENTAL HEALTH**

3 credits

A series of lectures and a coordinated field project designed to introduce the student to the dental needs of the community. Students propose, plan and participate in a community dental service project which is designed to assist a community organization with dental health care. Lectures are concerned with dental health education, epidemiology, dental public health, fluoridation and dental manpower.

*Offered Spring Semester***AH 401—CLINICAL PRACTICE 4**

6 credits

A course designed to provide students with the theoretical background needed to perform advanced clinical procedures to function as a respected member of the oral health team in any dental practice setting, and to utilize higher level thinking to make decisions regarding patient care. Emphasis is placed on periodical therapy for dental hygienists, ethics, and jurisprudence in dentistry, application for employment, third party systems, appointment control and recall systems. Simulation exercises, role playing, reading and research in the field will enable the dental hygiene students to discover their personal ethics and values in dentistry so that they will be able to handle most situations in the dental environment. Students must pass both clinical and theoretical components of the course in order to continue the program. **PREREQUISITE:** AH 303.

*Offered Spring Semester*

## DENTAL HYGIENE

### **AH 402—APPLIED DENTAL AUXILIARY SKILLS**

2 credits

This introductory course is designed to provide the dental hygiene student with an overall view of the various duties that may be within the performance realm of the dental hygienist. The course will provide the background information and introduce basic techniques to perform a wide variety of functions. Emphasis will be placed on those duties that are currently accepted within the state practice laws including rubber dam application, placement and removal of periodontal dressings, suture removal, placement of temporary restorations and application of sealants.

*Offered Spring Semester*

## **Developmental English (See English)**

## **Drafting and Design Technology**

### **GD 110-GD 240—PROGRAMMED ENGINEERING GRAPHICS**

*Offered Fall & Spring Semester*

#### **GD 110—MODULE 1**

1 credit

Instruments and their use, applied geometry, orthographic drawing and sketching.

#### **GD 120—MODULE 2**

1 credit

Lettering, auxiliaries: normal and edge views, sections and conventions.

#### **GD 130—MODULE 3**

1 credit

Intersections and developments, drawings and the shop working drawings.

#### **GD 140—MODULE 4**

1 credit

Dimensions, notelimits, catalogs.

#### **GD 150—MODULE 5**

1 credit

Introduction, electricity and batteries, schematics, assembly-disassembly.

#### **GD 210—MODULE 6**

1 credit

Power distribution graphics: Electrical drafting, contractor drawings.

#### **GD 220—MODULE 7**

1 credit

Electronics graphics: Electrical (Electronic Drafting), system design, special equipment.

#### **GD 230—MODULE 8**

1 credit

Architectural graphics: Oblique drawings, drawing of structures, graphical vendor analysis.

#### **GD 240—MODULE 9**

1 credit

Perspective drawings, shapes and shadows, presentation drawings.

#### **GD 260—GRAPHICS DESIGN LAB**

2 credits

The student will have the opportunity to put together all his knowledge obtained on various projects assigned by the instructor. He will do the design and rectify by calculations and computations in relationship to this along with the economical aspects.

*Offered Spring Semester*

## **Early Childhood Education**

### **NC 100—INTRO. TO EARLY CHILDHOOD EDUCATION**

3 credits

Introduction to Early Childhood Education is designed to acquaint the student with the philosophy, history and methodology of early learning programs. Within the scope of the course, the students will study the general components of a good early learning program, techniques for improving learning, problems of educational en-

vironments, including those of programs for disadvantaged children and parent involvement and the role of the teacher.

*Offered Fall Semester*

## **NC 110—CHILD GROWTH AND DEVELOPMENT**

3 credits

Provides the student with basic theories and research in growth and development. The course covers study of the individual from conception through early elementary school years in the areas of physical, emotional, social, cognitive, linguistic and personality development.

*Offered Fall Semester*

## **NC 120—EARLY CHILDHOOD FIELD WORK 1**

1 credit

Supervised field placements in community agencies and schools during each semester of the freshman year in the Early Childhood Education Program.

*Offered Fall Semester*

## **NC 130—THE PARENTING CHALLENGE**

3 credits

Provides the student with skills for developing and/or enhancing the parent/child relationship through lecture, discussion, and workshops. In this course, the student will become familiar with communication skills, behavior management, enhancing self-worth, learning at home, choosing a school program, and current parenting issues. This course is intended for teacher, parents, and parents-to-be.

## **NC 200—CURRICULUM FOR OPEN EDUCATION 1**

4 credits

Provides the students with integrated experiences in applied early learning through lecture, discussion and workshops in movement, dramatics, art, science and math. Students are helped to discover their own creative resources. **PREREQUISITE:** NC 100.

*Offered Spring Semester*

## **NC 210—THEORIES OF LEARNING & PERSONALITY DEVELOPMENT**

3 credits

Provides an examination of the cognitive and affective theories of Jean Piaget and Erik Erikson. Also studied are issues in contemporary learning and education. **PREREQUISITE:** NC 110.

*Offered Spring Semester*

## **NC 220—EARLY CHILDHOOD FIELD WORK 2**

2 credits

Supervised field placements in community agencies and schools during each semester of the freshman year in the Early Childhood Education Program.

*Offered Spring Semester*

## **NC 250—YOUNG CHILDREN AND BOOKS**

3 credits

This course provides the student with a study of the rich and dazzling world of literature for young children, focusing on picture books where art and literature blend into an aesthetic whole. Emphasis will be placed on reading to children, and children reading books, to ensure that children will benefit from the legacy of the written word. Course content will include types of books, types of illustrations, techniques of presentation, reviews of children's authors, previews of audiovisual materials based on books, and methods of eliciting children's responses to literature.

## **NC 300—CURRICULUM FOR OPEN EDUCATION 2**

4 credits

Provides the student with integrated experience in applied early learning through lecture, discussion and workshops in literature, story-telling, language development, reading, and the techniques and uses of audio-visual aids as they enrich the integrated curriculum. The role of the adult in providing early learning experiences that foster self-directiveness and self-expressiveness in children is emphasized. **PREREQUISITES:** NC 100 and NC 200.

*Offered Fall Semester*

## **NC 310—SURVEY OF CURRENT EARLY LEARNING PROGRAMS**

3 credits

Offers the student a survey of current programs in the field of early learning and examines their underlying rationale. Emphasis is placed on an eclectic approach to select the appropriate aspects of each program to meet the developmental needs of individual children. **PREREQUISITES:** NC 100, NC 110 and NC 210.

*Offered Fall Semester*



## EARLY CHILDHOOD EDUCATION

**NC 315—OBSERVATION & RECORDING OF CHILD BEHAVIOR SEMINAR** 1 credit

**NC 320—OBSERVATION & RECORDING FIELD STUDY**

3 credits

Provides the students with an opportunity to increase their objectivity and proficiency in observing and interpreting children's behavior. Lecture will comprise 25% of credit time and 75% will be spent in field placements. **PREREQUISITES:** NC 200, NC 210.

*Offered Fall Semester*

**NC 400—SUPERVISED STUDENT PRACTICUM**

6 credits

Supervised field experience in selected facilities planned in cooperation with community agencies and schools. Placements are for eighteen hours per week. The Practicum is taken in conjunction with Seminar and Critique, NC 420. **PREREQUISITES:** NC 100 and NC 315 inclusive.

*Offered Spring Semester*

**NC 420—SEMINAR AND CRITIQUE**

3 credits

Provides for systematic evaluation of the total program as it relates to the individual student. Research and discussion center on methods, materials, and content of early learning and include the role and responsibilities of professional and semi-professional personnel. Experiences encountered in student practicum placements are the basis for discussion. Taken simultaneously with NC 400. **PREREQUISITES:** NC 100 and NC 315 inclusive.

*Offered Spring Semester*

**NC 450—CHILD HEALTH, NUTRITION & SAFETY**

3 credits

Provides the student with basic information pertaining to nutritional value of food and the relationship of food habits to the health and education of young children, childhood diseases, preventive procedures, the syndrome of child abuse and various community agencies working with children and families. First Aid and CPR certificates will also be earned.

*Offered Spring Semester*

## Economics

**NE 100—PRINCIPLES OF ECONOMICS 1**

3 credits

This course is primarily concerned with macroeconomics and aims at developing an understanding of American economic institutions and the economic problems of inflation, unemployment and economic growth. Emphasis is given to the principal tool of economists, the market model of demand and supply. The effects of both fiscal and monetary policies on the major problems of the economy are thoroughly explored. **PREREQUISITE:** NONE.

*Offered Fall & Spring Semester*

**NE 200—PRINCIPLES OF ECONOMICS 2**

3 credits

This course is the sequential course to Principles of Economics 1 NE 100 and is primarily concerned with Microeconomics. Microeconomics deals with the subsystems of the economy such as the economics of the firm and the industry. The major emphasis is on a thorough analysis of supply and demand and of the four market structures. The theories and concepts are then applied to such relevant topics as poverty, ecology, and population growth. **PREREQUISITES:** NE 100.

*Offered Fall & Spring Semester*

**NE 300— CURRENT ECONOMIC PROBLEMS**

3 credits

A course designed to acquaint the student with several of the more important problems of our economy such as economic growth, unemployment, consumer credit, cost of air pollution and population explosion.

*Offered Fall & Spring Semester*



**NE 310—COMPARATIVE ECONOMIC SYSTEMS**

3 credits

This course considers an analysis of today's major economic systems, such as the American modified market economy, the mixed economies of Western Europe, France, Germany, United Kingdom and the command economies of the Soviet Union and the Peoples Republic of China. **PREREQUISITE:** NC 100.

*Offered Spring Semester*

## Education (See Psychology and Education)

## Electrical Technology

**EE 110—FUNDAMENTALS OF ELECTRICITY 311**

4 credits

Course dealing with the basic theories and concepts essential to the practical understanding of all phases of electricity and electronics. It treats fully the nature of electricity and magnetism, including an exposition of the electron theory as it relates to electricity. Consideration is given to Ohm's Law, and to associated circuits, batteries, induced E.M.F., magnetic circuits, DC measuring instruments, motors and generators.

*Offered Fall Semester***EE 120—ENGINEERING GRAPHICS 311**

3 credits

This course prepares a person to take a component part and present it in accordance with graphic language. This part must then be utilized with other parts graphically. All research necessary for the parts, hardware and software must be included. The student's concurrent electrical knowledge is utilized in graphic and symbolic form for electrical circuitry and construction techniques. This is carried on to the degree that as he establishes his future electrical knowledge, he can easily implement his graphic knowledge expansion. Standards of the industry are introduced continuously at the appropriate time for different phases of the art.

*Offered Fall Semester***EE 210—A.C. FUNDAMENTALS**

4 credits

Understanding of the basic electrical and electronic principles of DC circuits extended to include the more complex area of AC circuits. Generation, vector representation and algebraic manipulation of the sine wave, inductance, capacitance, resonance and Ohm's Law for alternating current circuits are studied. Practical methods of measuring inductance, capacitance and impedance are discussed along with AC and DC bridge circuits. Included also are the rudiments of complex-wave formation and analysis. In the laboratory, the student will perform experiments confirming theory and will be given experience and training in the repair of AC equipment.

*Offered Spring Semester***EE 220—FUNDAMENTALS OF ELECTRONICS 311**

4 credits

The principles and properties of solid-state devices are discussed in detail. Demonstration time is given for the student to observe construction methods, device operation and solid state reaction phenomenon.

*Offered Spring Semester***EE 310—ELECTRICAL CONTROL FOR MACHINES**

3 credits

Electrical motor control design, maintenance and troubleshooting are studied with the emphasis being on troubleshooting. The laboratory experiments are real circuits, making each exercise a unique experience. **PREREQUISITES:** EE 110, EE 210, and EE 220.

*Offered Fall Semester***EE 320—INDUSTRIAL ELECTRONIC CIRCUITS 1**

3 credits

This course deals with the fundamental circuits and components most frequently found in industrial electronic equipment. The basic circuit of a complete electronic control system and the characteristics of the component parts of each circuit are

## ELECTRICAL TECHNOLOGY

studied. Emphasis is placed on the characteristics of solid state devices and sensing elements. The laboratory section of the course is designed to verify by means of experiments the characteristics of the components and circuits used in industrial electronics. It is intended to develop an understanding of those circuit construction practices and testing techniques common to the field. **PREREQUISITES:** EE 110, 220, 210.

*Offered Fall Semester*

### **EE 330—SEMICONDUCTORS & TRANSISTORS 1**

3 credits

The principles and electrical properties of semiconductor diodes and transistors are studied. Special emphasis is placed upon the uses of semiconductor devices in rectifiers, amplifiers, oscillators and special circuits. The accompanying laboratory work enables the student to measure the properties of these devices and to verify their operating principles and uses in actual circuits. **PREREQUISITES:** EE 110, 220, 210.

*Offered Fall Semester*

### **EE 391—FUNDAMENTALS OF POWER CIRCUITS 1**

3 credits

The classes will be geared to industrial AC and DC power equipment. This will include DC motors, DC generators, single phase AC motors and single phase AC generators. Other topics to be covered will be power factor and power factor correction problems. **PREREQUISITES:** EE 110, EE 210, EE 310, EE 330, EE 320.

*Offered Continuing Education*

### **EE 410—INDUSTRIAL ELECTRONIC CIRCUITS 2**

3 credits

This course is a continuation of Industrial Electronic Circuits. The emphasis is now on systems employing the solid state devices covered in Electronic Circuits 1. **PREREQUISITES:** EE 320.

*Offered Spring Semester*

### **EE 430—SEMICONDUCTORS & TRANSISTORS 2**

3 credits

A study of the circuitry and design of semi-conductor devices commonly used in industry. Among the topics covered are servo controls, switching networks, regular circuits and special amplifiers. The nature and design of these circuits are analyzed using the latest components available. **PREREQUISITES:** EE 220, 210, 330.

*Offered Spring Semester*

### **EE 440—ELECTROMECHANICAL CRT DESIGN**

2 credits

The design and application to industrial electro-mechanical systems of electrical circuitry using solid state devices, integrated circuits, memory storage and electronics. **PREREQUISITES:** EE 110, 220, 210.

*Offered Spring Semester*

### **EE 450—OPERATIONAL AMPLIFIER CIRCUITS**

3 credits

This course is designed to introduce the student to op-amp basic operations, parameters, parameter measurements, and basic operational amplifier circuitry. In addition, some special purpose linear circuits and amplifiers are covered. The laboratory section is concerned with the verification of theory studied in the course. **PREREQUISITES:** EE 110, EE 210, EE 220, EE 320, EE 330.

*Offered Spring Semester*

### **EE 490—FUNDAMENTALS OF POWER CIRCUITS**

3 credits

The classes will be geared to the discussion of power circuits at the primary feeder level and should be of interest to industrial plant personnel although they will also be geared to utility people. Fundamentals of power-feeder calculations will be covered and will include power, power factor and power factor correction problem solving. Equipment to be studied will include generators, power transformers, potential and current transformers, power circuit breakers and relays. Typical power feeders will be described combining these equipments.

*Offered Continuing Education*

**EE 491—FUNDAMENTALS OF POWER CIRCUITS 2**

3 credits

A continuation of Power Circuits 1. The course will deal with three phase power circuit problems. Phase to ground, phase to phase and 3 phase ground fault problems will be studied. Other topics to be covered will be 3 phase voltage regulation. PREREQUISITE: EE 391.

*Offered Continuing Education*

## Electronic Technology

**ET 110—BASIC ELECTRONICS 1**

3 credits

This course is an introduction to the fundamental concepts of electronics. Coverage includes concepts of electricity, series and parallel circuits, network theorems and laws, and metering principles. The purpose of this course is to present the concepts and ideas which will be needed in more advanced course work about specific electronic systems. Emphasis is placed on the analysis of direct current networks, specifically, the calculation of such circuit parameters as current, voltage and power for various network configurations.

*Offered Fall Semester***ET 115—ELECTRONICS LAB 1**

2 credits

This course is the first in a sequence of four courses designed to give the student practical experience with electronic components, measuring instruments and equipment. The emphasis in the laboratory work is on the verification of theory studied in Basic Electronics 1 about direct current networks. Equal emphasis is placed on the familiarization of the student with electronic metering principles, electronic testing procedures and the use of various electronic components commonly found in the Electronics industry.

*Offered Fall Semester***ET 120—ELECTRONIC GRAPHICS**

2 credits

This course emphasizes drafting form, geometric construction, orthographic projection, dimensioning and views. The latter portion includes electronic symbols, circuit diagrams, wiring schematics, and chassis layouts.

*Offered Fall Semester***ET 210—BASIC ELECTRONICS 2**

3 credits

The fundamental concepts of alternating current circuits are presented. Starting with a review of direct current theorems and laws, the concept of alternating currents are introduced using phasor analysis. Some topics include capacitive and inductive resistance, transients, time constraints, power and power factor, the j-operator, resonant circuits, circuit Q and bandwidth, filters and switching circuits. PREREQUISITES: ET 110 and MM 101-MM 103.

*Offered Spring Semester***ET 215—ELECTRONICS LAB 2**

2 credits

A continuation of Electronics Lab 1, the emphasis in this course is again placed on practical experience. The student receives continued exposure to electronic components, test equipment and circuitry. Now the laboratory work is concerned with the verification of theory studied in the student's course work on passive networks and active solid-state devices. The student gains experience in the setting up and testing of useful electronic circuits and systems. PREREQUISITE: ET 115 with a "C minus" or better.

*Offered Spring Semester***ET 220—ACTIVE NETWORKS 1**

3 credits

This course is an introduction to the theory of solid state devices. Topics include an introduction to semiconductor materials and physics, dopins, P-N junctions, various diodes and diode circuits, an introduction to bi-polar and field effect transistors, transistor biasing schemes, load line analysis, A-C models and equivalent circuits, determination of voltage and current gain, input and output resistance, and maximum signal handling capability. PREREQUISITES: MM 103, ET 110, ET 115.

*Offered Spring Semester*



# ELECTRONIC TECHNOLOGY

## **ET 310—ACTIVE NETWORKS 2**

3 credits

A continuation of Active Networks 1. This course deals with applications of the theory and circuits discussed in the first part of the course. Cascaded stages, coupling methods and frequency considerations are covered. Other topics include feedback concepts, differential amplifiers and linear integrated circuits, power amplifiers, voltage regulators, oscillator circuits, and latching devices such as SCR's, diacs, triacs and unijunction transistors. PREREQUISITES: Senior standing, ET 210, ET 215, ET 220, ED 230, MM 107, MM 109.

*Offered Fall Semester*

## **ET 320—COMMUNICATIONS SYSTEMS 1**

3 credits

The aim of this course is to present information about the circuit processes and basic theories essential to the understanding of communications systems. Topics included in the course are noise limitations, filter theory, amplitude modulation, frequency modulation, single-sideband modulation, radio receivers and pulse modulation schemes. How these systems are used to transmit different information forms such as audio or video or data signals is studied in detail. PREREQUISITE: Senior standing.

*Offered Fall Semester*

## **ET 330—FUNDAMENTALS OF PULSE & DIGITAL CIRCUITS**

3 credits

The fundamentals applying to nonsinusoidal pulse, timing and switching circuits are presented. The theory is demonstrated by actual measurement and observation and the circuits are analyzed mathematically in detail. Some of the topics covered include the application of circuit theorems, waveform analysis, integration and differentiation circuits, semiconductors as switches, multivibrators, sawtooth generators and gating and delay circuits. PREREQUISITE: Senior standing.

*Offered Fall Semester*

## **ET 340—COMPUTER ARCHITECTURE & LOGIC CIRCUITRY**

3 credits

This course is an introduction to the concepts of computer operation. Coverage includes computer programming, computer mathematics, Boolean algebra and logic circuitry. The aim of the course is to present the necessary information essential to the understanding of digital computers and numeric control systems. PREREQUISITE: Senior standing.

*Offered Fall Semester*

## **ET 350—ELECTRONICS LAB 3**

2 credits

This course is a continuation of the laboratory experience for students involved in the Electronics Technology curriculum. However, now the emphasis is on material covered in the senior year. The theory learned in the course work is tested in the laboratory by observations of circuits and systems pertinent to those courses. Besides the reinforcement of concepts and ideas germane to the electronics curriculum, the student's proficiency with electronic equipment and test devices is improved and familiarity with practical electronics applications enhanced. PREREQUISITES: ET 215 with a "C minus" or better and Senior standing.

*Offered Fall Semester*

## **ET 420—COMMUNICATIONS SYSTEMS 2**

3 credits

A continuation of Communications Systems 1. The aim of this course is to present the theory behind the operation of more sophisticated electronic communications systems. Topics included in this course are stereo FM and SCA systems, both monochromatic and color television, transmission lines, antennas, and microwave systems. The operation and theory of microwave system is covered in detail with emphasis given to x-band waveguide devices and components. PREREQUISITE: Senior standing and ET 230.

*Offered Spring Semester*

## **ET 430—DIGITAL COMPUTER SYSTEMS**

3 credits

This course is an introduction to the operation of digital computer systems. Coverage includes computer arithmetic, logic unit operation, the operation and organization of computer memory, the operation of input-output devices, computer timing and computer control. The aim of the course is to present the information essential to



the understanding of the operation of digital computers and how they interface with the world we live in so as to be useful for business, scientific and industrial applications. **PREREQUISITE:** ET 430 and Senior standing.

*Offered Spring Semester*

## **ET 440—INTEGRATED ELECTRONICS**

3 credits

The aim of this course is to present information relative to the theory behind the operation of the "fundamental building blocks" of both analog and digital electronic systems. Topics included in the course are a review of bipolar and field-effect transistor theory, amplifiers, integrated circuit theory, crystal and feedback oscillators and voltage regulators. This course brings together the theory of semiconductor devices and their applications as useful electronic systems elements. **PREREQUISITES:** Senior standing.

*Offered Spring Semester*

## **ET 450—ELECTRONICS LAB 4**

2 credits

This course is a continuation of Electronics Lab 3. The course is now concerned with the theory studied in the fourth semester of the electronics curriculum. Again, theoretical concepts are reinforced and practical ability enhanced. **PREREQUISITES:** ET 350 with a "C minus" or better and Senior standing.

*Offered Spring Semester*

# Engineering and Science Transfer (See Engineering Transfer)

## Engineering Transfer Option to Engineering & Science Transfer

### **ME 100—SPECIAL PROJECTS IN ENGINEERING 1**

1, 2, 3, or 4 credits

Special projects in engineering under the direction of an instructor. **PREREQUISITE:** Permission of the Department Chairperson.

*Offered Fall & Spring Semester*

### **ME 101—SPECIAL PROJECTS IN ENGINEERING TECHNOLOGY 1**

1, 2, 3, or 4 credits

Special projects in Engineering Technology under the direction of an instructor. **PREREQUISITE:** Permission of the Department Chairperson.

*Offered Fall & Spring Semester*

### **ME 102—SPECIAL PROJECTS IN ENGINEERING TECHNOLOGY 2**

1, 2, 3, or 4 credits

Continuation of Special Projects in Engineering Technology 1. **PREREQUISITE:** Permission of the Department Chairperson.

*Offered Fall & Spring Semester*

### **ME 103—INTRODUCTION TO ENGINEERING 21**

3 credits

An introduction to the field of engineering including an overview of the engineering computations utilizing digital computers. Specific topics include a study of the computer language TRUE BASIC, computer graphics, units, dimensions, dimensional analysis, numerical analysis techniques, and an introduction to Linear Algebra. A strong emphasis will be placed on using the computer to do extensive or repetitive computations in these areas. Weekly programming projects will be assigned. Two hours of lecture and one three hour laboratory per week. **PREREQUISITE:** MM 101-103 or MM 150.

*Offered Fall Semester*

### **ME 104—INTRODUCTION TO ENGINEERING 22: COMPUTER PROGRAMMING**

3 credits

A continuation of Introduction to Engineering 21 with the major emphasis on the development of the computer language FORTRAN 77 as a powerful tool in solving a number of diverse problems in science and engineering. A brief introduction to

## ENGINEERING TRANSFER

numerical analysis is also presented. Three hours of lecture. PREREQUISITE: MM155.

*Offered Spring Semester*

### **ME 105—DESCRIPTIVE GEOMETRY**

1 credit

This course is intended as a primer in graphic solving methods required by various fields of engineering. The student will learn the principles of basic geometry, including points, lines, and planes, and apply them to various practical applications. Extensive use will be made of drawing instruments for accuracy.

*Offered Fall Semester*

### **ME 107—BASIC FOR ENGINEERS**

2 credits

A study of the computer language BASIC and an introduction to elementary numerical analysis techniques. Special emphasis is placed on solving problems encountered in the engineering field that require repetitive or trial and error calculations. One hour of lecture and one two-hour laboratory. PREREQUISITE: MM 155

### **ME 200—SPECIAL PROJECTS IN ENGINEERING 2**

1, 2, 3 or 4 credits

Continuation of ME 100. PREREQUISITE: Permission of the Department Chairperson.

*Offered Fall and Spring Semesters*

### **ME 204—NUMERICAL ANALYSIS & COMPUTER METHODS**

3 credits

Extensive application of the FORTRAN language to diverse engineering problems. Numerical techniques for evaluating functions, curve fitting, interpolation, differentiation and integration, and solving systems of algebraic and first and second order differential equations. Satisfies concentration requirements for transfer in computer science. PREREQUISITE: ME 104, Introduction to Engineering 22/Computer Programming.

*Offered Fall Semester*

### **ME 310—MECHANICS 1**

3 credits

A vector approach to the study of engineering statics. This includes the resolution and composition of forces as applied to the analysis of systems in static equilibrium. Friction, centroids and moments of inertia are investigated. PREREQUISITE: MM155 and Physics MP132.

*Offered Fall Semester*

### **ME 311—STATICS LABORATORY**

1 credit

Measurement of tensile strength, Young's Modulus, deflection of beams, forces in trusses and columns.

*Offered Fall Semester*

### **ME 320—SYSTEMS ANALYSIS 1**

4 credits

Physical characteristics and mathematical models of system elements with an emphasis on electrical circuits, techniques for writing and solving system dynamic equations. Three hours of lecture and one three-hour laboratory. PREREQUISITE: MM255.

*Offered Fall Semester*

### **ME 322—INTRODUCTION TO DIGITAL SYSTEMS**

3 credits

An introduction to the theory of digital circuits, stressing general techniques for the analysis and synthesis of combinational and sequential logic systems.

*Offered Fall Semester*

### **ME 330—INTRODUCTION TO MATERIAL SCIENCE**

3 credits

The atomic and molecular phenomena responsible for the behavior of materials. The relationship between the atomic structure of materials and their behavior is emphasized. PREREQUISITE: Chemistry 22 MC203.

*Offered Fall Semester*

### **ME 331—MATERIAL SCIENCE LAB**

1 credit

This course is an introduction to mechanical testing and the metallography of metals and alloys. This course must be taken concurrent with ME330.

*Offered Fall Semester*

## **ME 335—MECHANICS OF MATERIALS**

3 credits

A study of the stress-strain relationships in solids subjected to external force loads. This includes tension, compression, torsion, flexure and deflection of columns and beams. **PREREQUISITE:** Mechanics 1 ME 310.

*Offered Spring Semester*

## **ME 340—INTRODUCTION TO CHEMICAL ENGINEERING**

3 credits

An introduction to the material and energy balances commonly applied to processes in the chemical, petroleum and environmental fields. Also included is a study of the pressure-volume temperature relationships of gases and a brief introduction to selected thermodynamic properties of solids, liquids, and gases. Computer solutions are utilized in selected problems. **PREREQUISITES:** MM255, Chemistry 22 and Introduction to Engineering 22.

*Offered Fall Semester*

## **ME 350—ENGINEERING THERMODYNAMICS 1**

3 credits

A classical presentation of the study of the laws of conservation of matter and energy, the three basic laws of thermodynamics and their application to batch and flow processes. Thermal properties of ideal and real gases, solids and liquids including internal energy, enthalpy and entropy are presented. Energy cycles are discussed. **PREREQUISITES:** MM355 and Physics 21 MP132.

*Offered Spring Semester*

## **ME 355—ENGINEERING SURVEYING**

4 credits

An introduction to the theory and practice of surveying. Topics discussed include transverse computations; the use of tape, level and transit; topographic surveying and mapping; the presentation of numerical data, and orthographic projections. Two hours of lecture and six hours of laboratory. **PREREQUISITE:** MM 250

*Offered Fall Semester*

## **ME 360—FLUID MECHANICS**

3 credits

This course consists of a study of fluid statics and kinematics. A complete study of frictionless incompressible flow using Bernoulli's equation, the continuity equation and the momentum equation is presented and applied to various engineering problems. The concept of viscosity and laminar and turbulent flow are discussed. The boundary layer equations on laminar and turbulent flows are developed. **COREQUISITE:** Engineering Mathematics MM436.

*Offered Fall Semester*

## **ME 410—MECHANICS 2**

3 credits

A vector approach to kinematics and particle kinetics utilizing Newton's Law of Motion, Conservation of Energy and the concept of Impulse and Momentum. Problems of rotation and translation are analyzed in rectilinear and curvilinear co-ordinates. **PREREQUISITE:** Mechanics 1 ME 310.

*Offered Spring Semester*

## **ME 420—SYSTEMS ANALYSIS 2**

4 credits

Concepts relating to transfer functions: digital and analog solutions of system equations, time and frequency domain analysis techniques and stability. Three hours of lecture and one three-hour laboratory. **PREREQUISITE:** Systems Analysis 1 ME320.

*Offered Spring Semester*

## **ME 421—ENGINEERING MEASUREMENTS AND ANALYSIS**

2 credits

The measurement of data and its statistical analysis is presented as a means of introducing a first-level course in transducer theory and data acquisition. The major emphasis is on the transducers that measure strain, temperature, pressure, and flow. **PREREQUISITES:** Physics 21 MP 132, Physics 22 MP 232; Systems Analysis 1 ME 320 is recommended but is not required.

## **ME 422—ENGINEERING MEASUREMENTS & ANALYSIS LABORATORY**

1 credit

Data will be taken on real transducers and a comparison will be made with transducers theory presented in ME 421. Systems to be studied will be the water tank, the thin walled cylinder, the heat exchange, the fluid friction apparatus, the air duct, and the compressible and incompressible flow rings. **PREREQUISITES:** Physics 21



## ENGINEERING TRANSFER

(MP 132), Physics (MP 232); Systems Analysis 1 (ME 320) is recommended but not required.

### **ME 423—ACTIVE NETWORKS 1**

3 credits

Active network theory, biasing, device models and linear equivalent circuits; multistage feedback, tuned and power amplifiers; power supplies, regulators and active switches. **PREREQUISITE:** Introduction to Digital System ME 322.

*Offered Spring Semester*

### **ME 440—CHEMICAL ENGINEERING THERMODYNAMICS 1**

3 credits

An introductory course dealing with the fundamental concepts and laws of thermodynamics and of the thermodynamic properties of materials. The major emphasis is on chemical systems. **PREREQUISITE:** ME 340.

*Offered Spring Semester*

### **ME 450—ENGINEERING THERMODYNAMICS 2**

3 credits

Continuation of Engineering Thermodynamics 1. Deals with the engineering applications. These include fluid mechanics, gas dynamics, gas and vapor power cycles, refrigeration, heat transfer and chemical reactions and equilibrium. **PREREQUISITE:** Engineering Thermodynamics 1 ME 350.

*Offered Fall Semester*

### **ME 460—HEAT TRANSFER**

3 credits

A study of the fundamental laws of heat transfer by conduction, convection and radiation. Application of conduction and convection to insulation and heat exchanger design. Selected one, two and three dimensional problems in conductive heat transfer are solved using analytical, graphical and numerical techniques. Heat transfer in laminar and turbulent boundary layers in comprehensible fluids is investigated. Radiative heat exchange is examined. **PREREQUISITE:** Fluid Mechanics ME360.

*Offered Spring Semester*

### **ME 905—DIRECTED STUDY IN COMPUTER SCIENCE 1**

3 credits

Investigation of a specific topic in the computer science field under the direction of an instructor. **PREREQUISITE:** Permission of the department chairperson.

*Offered Fall Semester*

### **ME 915—DIRECTED STUDY IN COMPUTER SCIENCE 2**

3 credits

A continuation of Directed Study in Computer Science 1. **PREREQUISITE:** Permission of the department chairperson.

*Offered Fall & Spring Semester*

## English

### **LE 100—ENGLISH COMPOSITION 1**

3 credits

The objective of this course is to improve the student's ability to communicate effectively in writing. Areas covered in this course will include the major rhetorical modes, effective construction of paragraphs and essays, and the documented research paper.

*Offered Fall & Spring Semester*

### **LE 200—ENGLISH COMPOSITION 2:**

#### **AN INTRODUCTION TO LITERATURE**

3 credits

This course involves the close reading and class discussion of fiction, poetry and plays, mostly modern, and essay assignments involving writing about literature. Emphasis is on the role of individual literary works as expressions of universal human experience.

*Offered Fall & Spring Semester*

### **LE 201—BUSINESS ENGLISH**

3 credits

This course is designed to prepare business students to meet the requirements of writing all kinds of communications in the business world, emphasizing the construction of proper business letters, reports, resumes, and memoranda. Students develop



an understanding of correct style, form, and tone and gain an ability to write clear and concise business communications. **PREREQUISITE:** LE 100

*Offered Fall & Spring Semester*

### **LE 202—TECHNICAL REPORT WRITING**

3 credits

Instruction has been organized to emphasize methods involved in the writing process. Special emphasis has been placed on the factors which the report writer must consider and the processes he must follow in writing a report. The student will become acquainted with the techniques of analyzing a writing situation, methods of investigating the problem, organizing the report and preparing the final copy. **PREREQUISITE:** LE 100

*Offered Fall & Spring Semester*

### **LE 203—FUNDAMENTALS OF SPEECH**

3 credits

Everyone must communicate in life, and this course is about communicating in personal affairs, employment, and society. Students will write and present talks about a variety of topics and situations. Being educated means having something to say; this course will help you say it.

*Offered Fall & Spring Semester*

### **LE 300—WORLD LITERATURE 1**

3 credits

Masterpieces of Western Culture from 2000 B.C. through the Renaissance are carefully examined in this course to discover the secret of their endurance and their unique value to the modern world. All works are in translation and may include, among others, selections from the "Bible," "The Iliad" of Homer, Greek Tragedy, Dante's "Inferno," Boccaccio, Rabelais, "Don Quixote," and essays by Montaigne. **PREREQUISITE:** English Composition 1 (LE 100) with English Composition 2 (LE 200) recommended.

*Offered Fall & Spring Semester*

### **LE 301—ENGLISH LITERATURE 1**

3 credits

This course consists of readings in English literature from the Anglo-Saxon period to the eighteenth century, especially Beowulf, Chaucer, Shakespeare, Spenser, Milton, Pope and Swift. Primary emphasis is placed on the close and critical reading of individual works, but the works are also studied as representations of the major literary and intellectual movements in the history of English literature.

*Offered Fall & Spring Semester*

### **LE 302—AMERICAN LITERATURE 1**

3 credits

The growth of American literature from the Colonial period to the Civil War reflects major developments in American thought, beliefs, and values. Such writers as Bradford, Bradstreet, Edwards, Franklin, Poe, Hawthorne, Melville, Emerson and Thoreau will be the basis of our close, critical reading and discussion, representing our literary and intellectual heritage.

*Offered Fall Semester*

### **LE 304—A SURVEY OF BLACK AMER. LITERATURE 1**

3 credits

This course is designed to accomplish two aims. First, there will be a concentrated study of the writings by Black Americans from slavery times to 1940, including not only the usual fiction, essays and poetry but also folk tales, orations, and slave narratives. Secondly, this course will focus upon developing an awareness of the unique quality of the "Black Experience" as it has defined the various modes and themes that characterize Black Literature.

*Offered Fall Semester*

### **LE 305—CHILDREN'S LITERATURE**

3 credits

Children's Literature is an elective one-semester survey course. The material includes the study of the history of children's literature; juvenile novels for children 8-12; picture books, their subject matter, and illustrative techniques, for children ages 3-6; folktales and literary fairy tales; and children's poetry. The emphasis is on American publications.

*Offered Fall & Spring Semester*

**LE 306—IRISH LITERATURE**

3 credits

The course introduces the student to contemporary Irish Literature. It includes myths, legends and a general history of Ireland, with the focus on such writers as O'Casey, Synge, Joyce, Yeats, O'Connor, Behan, Pearse, Heaney, and Montague. Films and slides for visual enrichment are shown regularly.

*Offered Spring Semester***LE 307—THE BIBLE AS LITERATURE**

3 credits

Students read the text of the Old and New Testaments of the Bible as selected, emphasizing the wide variety of literature the books contain. Folktales, sagas, hero journeys, poetry, short fiction, wisdom literature, biography, sermons and drama show an encyclopedia of writing around a central theme and tradition. Students present reports on related material.

*Offered Spring Semester***LE 308—WOMEN IN LITERATURE**

3 credits

This course will focus on the roles, myths, and stereotypes of women in different historical periods, and relate these roles to the social structure, the status, and function of women in the particular social setting in which the literary works were written. The study will enable us to discover to what extent the image of women in literature reflects reality, and to what extent it is an ideal encouraged to keep women in a particular role. Works by Virginia Woolf, Kate Chopin, and Anne Sexton are included readings.

*Offered Spring Semester***LE 310-312—COLLEGE THEATER WORKSHOP 1, 2, & 3**

1, 2, or 3 credits

A workshop in all aspects of theatrical production. Participation in college theatre productions is required of all students. It may be taken by qualified students, faculty, and staff as a co-curricular activity with or without credit. Field trips to theaters and conventions and speakers from all areas of the theater will be included.

*Offered Fall & Spring Semester***LE 328—LOVE AND LITERATURE**

3 credits

This course examines the theme of love in major literary works. Many forms of love, including love of God, nature, and romantic love are studied and discussed. Students read short fiction, poetry and drama by such writers as Gerard Manley Hopkins, William Shakespeare and E.E. Cummings.

**LE 343—MODERN POETRY**

3 credits

This course examines representative works of poetry from various literary periods. The major poets of America and Europe are studied and discussed, though modern poetry is given considerable importance. The course gives particular attention to the art of poetry as a literary genre.

**LE 400—WORLD LITERATURE 2**

3 credits

This course extends the work of World Lit. 1 from the seventeenth to the twentieth centuries. It may include, among others, selections of Pascal, Voltaire, "Confession" of Rousseau, Goethe's "Faust," Flaubert, Dostoevsky, Tolstoy, Proust, tales of Kafka, and essays by Camus. **PREREQUISITE:** English Composition 1 (LE 100) with English Composition 2 (LE 200) recommended.

*Offered Fall & Spring Semester***LE 401—ENGLISH LITERATURE 2**

3 credits

This course is a continuation of English Literature 1 and consists of readings from the Romantic period to the twentieth century, especially the works of Wordsworth and Coleridge, Byron, Keats and Shelley, Tennyson and Browning, and Eliot and Joyce. The works are studied from the same perspective and with the same emphasis as in English Lit. 1.

*Offered Spring Semester***LE 402—AMERICAN LITERATURE 2**

3 credits

Readings of American fiction, poetry, and drama from the Civil War to the present, ranging from Whitman, Dickinson, Twain, James, to Frost, Fitzgerald, Hemingway, Faulkner and several contemporary writers. This course continues the survey of American literature from the same critical perspective as American Literature 1.

*Offered Spring Semester*

**LE 404—A SURVEY OF BLACK AMERICAN LITERATURE 2**

3 credits

This course is a continuation of LE 304 and, as such, also provides a broad sampling of Black American authors and their various types of writing. The works studied include those genres which have dominated the modern era from the mid-1940's to the present — realistic and protest fiction, innovative poetry and drama, contemporary criticism, etc. Moreover, the course will continue, on a more immediately relevant level, the development of an appreciation of that particular quality of life known as the "Black Experience."

*Offered Spring Semester***LE 408—WOMEN IN LITERATURE 2**

3 credits

This course will serve as a natural progression of the basic survey course in Women in Literature. However, rather than focusing on short stories by women, Women in Literature 2 will examine women's short novels, plays, essays, and poetry. The readings will include: three Classic Greek plays, a forgotten 19th century American utopian novel, two 20th century novels, and a contemporary collection of essays and poetry. **PREREQUISITE:** A interest in the analysis and discussion of women's writing/issues.

**LE 900—DIRECTED STUDY IN ENGLISH**

Variable Credit

Projects for advanced individual study by special arrangement with the instructor and approval of the Department and Division Chairpersons. Students are expected to demonstrate willingness and ability to work on their own with minimal assistance.

**LD 080—ENGLISH AS A SECOND LANGUAGE LEVEL 1**

3 credits

This course in the acquisition of development of basic language skills provides the student with a guided program in the areas of conversational fluency, reading and listening comprehension, vocabulary development and elementary written expression. Pretests are used to evaluate individual competency and priority.

**LD 081—ENGLISH READING COMPREHENSION FOR BILINGUALS LEVEL 1**

3 credits

This course is a review of the basic language skills that are introduced in the LD 080—English as a Second Language I course. It is offered jointly with LD 080.

**LD 082—BASIC SKILLS IN CONVERSATION LEVEL 1**

3 credits

This course is a conversation course with emphasis given to oral skills, and conversational fluency. Through a broad range of student-centered activities, students are given the opportunities to practice and reinforce important grammatical structures and patterns.

**LD 083—ENGLISH AS A SECOND LANGUAGE LEVEL 2**

3 credits

English as a Second Language Level 2 is an intensive course designed for advanced beginning students of English as a Second Language. Through extensive oral and written drills and exercises, the course offers students an opportunity to master the fundamentals of English grammar and usage.

**LD 084—ENGLISH READING COMPREHENSION FOR BILINGUALS LEVEL 2**

3 credits

This course is a review of the language skills introduced in the E.S.L. 2 course. It is offered jointly with LD 083.

**LD 085—BASIC SKILLS IN CONVERSATION LEVEL 2**

3 credits

This course is an advanced conversation course with emphasis on oral skills. English Conversation 2 is a three-credit course designed for advanced beginning students of English as a Second Language. Through a broad range of student-centered activities, students are given an opportunity to practice and reinforce important grammatical structures and patterns. While these activities take various forms—role-plays, extended guided conversations, questions about the students' real world, and topics for classroom discussion or debate—they are intended to engage actively the students in meaningful conversation based upon their interests, backgrounds, and imagination. **PREREQUISITES:** To enter E.S.L. 2 and ERCEB 2, students must either have successfully completed E.S.L. 1 and ERCEB 1 or scored at the appropriate level on the placement examinations of the English as a Second Language Program.



English Conversation 2 is a complement to these courses and is generally taken simultaneously.

## **LD 086—ENGLISH AS A SECOND LANGUAGE LEVEL 3** 3 credits

Course is designed to meet the needs of students who have attained proficiency in English. It will provide practice in writing paragraphs and essays, reading and speaking. The emphasis will be on writing skills.

## **LD 087—ENGLISH READING COMPREHENSION FOR BILINGUALS LEVEL 3** 3 credits

This course is a review of the basic language skills that are introduced in the English as a Second Language 3 course. It is offered jointly with LD 086.

## **LD 088—BASIC WRITING SKILLS** 3 credits

This course provides a review of basic English skills in grammar and composition to prepare students to enter Communication Skills or Composition 1. The work in this course covers sentence structure, paragraph writing, and essay development. **PREREQUISITES:** To enter E.S.L. 3 and ERCB 3, students must either have successfully completed E.S.L. 2 and ERCB 2 or scored at the appropriate level on the placement examinations of the English as a Second Language Program.

## **LD 089—ENGLISH/READING WORKSHOP** 3 credits

The English/Reading Workshop is an integrated, performance oriented approach for students who would benefit from pre-college review before entering the basic health program. Basic skills in composition, reading, and grammar are developed. Instruction in English as a Second Language is also available for those students entering or working in the Bilingual Program. To facilitate the student's introduction to the health field, instructional materials and assignments correlate wherever feasible with terms, content and activities of the corequisite Math/Science Workshop. The eight-week program offers eight hours weekly of highly individualized instruction in English (English As a Second Language where appropriate) and Reading, as well as three hours of workshops in library and study skills and health career orientation. Pre-and post-tests will determine the student's progress. A passing grade requires that the student successfully meet the performance criteria established through attendance, completion of assignments, and testing.

## **LD 099—COMMUNICATION SKILLS** 3 credits

This course provides a review of basic English skills in grammar and composition in order to prepare students for college-level writing. The work in the course covers the parts of speech, sentence structure, paragraphing, and essay development. The course, intended for students who have had difficulty with written English, provides preparation for English Composition I, but it cannot be counted for graduation credit. Some sections of the course will be taught on a modular basis.

*Offered Fall & Spring Semester*

## **LD 091; LD 092; LE 105—READING** 3 credits each

### **LD 091—READING MODULE 1** 3 credits

Reading 1 offers practice in basic reading skills. The main objective is to improve comprehension on a literal level. Vocabulary and rate work will be included to meet individual student needs as the course progresses.

*Offered Fall & Spring Semester*

### **LD 092—READING MODULE 2** 3 credits

Reading 2 offers practice in improving comprehension, vocabulary, and rate. It is a continuation of the fundamental work in Reading 1 and is intended to help students read textbooks and non-academic material with greater ease and understanding.

*Offered Fall & Spring Semester*

### **LE 105—READING MODULE 3** 3 credits

Reading 3 is an advanced reading course. Vocabulary work includes extensive word part study. Comprehension selections include questions on the literal, interpretive and evaluative levels, and rate work demands that students demonstrate an increase in speed while maintaining high comprehension scores.

*Offered Fall & Spring Semester*



## Environmental Technology

### HE 110—ENVIRONMENTAL STUDIES

3 credits

An introduction to environmental pollution, its effect on man and other living things and the basic principles of sanitation, treatment and control. It includes a discussion of the major pollutants of air, water and land; sewage and industrial waste composition; disease transmittal, control methods and water quality standards.

*Offered Fall Semester*

### HE 120—PROCESS PROBLEMS 1

4 credits

An introduction to the analytical approach to problem solution and a familiarization with various calculation aids. It will include turning work problems into equations, problem solving, exponential quantities, graphing and chemical stoichiometry.

*Offered Fall Semester*

### HE 210—TREATMENT PLANT OPERATIONS 1

3 credits

An investigation of the physical and chemical properties utilized in the treatment of liquid wastes. It includes such topics as collection & transportation systems; treatment methods; solids digestion; solids processing and disposal; polishing and industrial waste treatment.

*Offered Spring Semester*

### HE 220—BASIC INSTRUMENTATION

3 credits

A study of electrical, mechanical and pneumatic operating principles as applied to instrumentation used for the measurement and control of process variables. Instrumentation terminology is introduced and familiarity with typical types and applications of instruments is developed.

*Offered Spring Semester*

### HE 310—WATER SAMPLE ANALYSIS & CONTROL PROC

3 credits

A study of the processes utilized to reduce or eliminate pollution of water. Topics such as coagulation, precipitation, filtration, screening, catalysis, and absorption are investigated.

*Offered Fall Semester*

### HE 320—INDUSTRIAL HEALTH & SAFETY

3 credits

An investigation of the procedures and attitudes required so that man may safely work in the vicinity of industrial processes and equipment. Topics include the man-machine interaction, development of mental attitudes, housekeeping and the effect of the process atmosphere on health.

*Offered Fall Semester*

### HE 330—TREATMENT PLANT OPERATIONS 2

3 credits

An investigation of the physical and chemical processes utilized in the treatment of liquid wastes. It includes such topics as collection and transport systems; hydraulic theory; flow measurement; pumping; treatment methods; solids digestion; solids processing and disposal; polishing and industrial waste treatment.

*Offered Fall Semester*

### HE 410—WASTEWATER SAMPLE & PROCESS

3 credits

An investigation of the chemistry of domestic and industrial liquid wastes, their effects upon wastewater treatment plant and processes and the test procedures and techniques required for treatment plant operation. It includes such topics as collection & preservation of samples, acidity and alkalinity, color, odor, turbidity, hardness, mineral content, chlorination, dissolved oxygen (DO), biochemical oxygen demand (BOD), chemical oxygen demand (COD), greases, volatile acids, toxic metals and suspended matter.

*Offered Spring Semester*

### HE 420—SYSTEMS MAINTENANCE

3 credits

A study of wastewater treatment plant equipment will emphasize diagnosis & repair and preventive maintenance programs. Topics include tanks, piping systems, valves, pumps, motors, controls, instruments, screens, filters, mixers, chlorinators, centri-

fuges and incinerators. Maintenance planning, scheduling and record keeping is emphasized.

*Offered Fall Semester*

## **HE 430—AIR SAMPLE ANALYSIS & CONTROL PROCESS**

3 credits

An investigation of the equipment & techniques used in atmospheric sampling and of the instruments used to analyze the samples. Topics include the behavior of gases and suspended particles, sampling methods and equipment, electrical analysis, microscopy, spectroscopy and chromatography.

*Offered Spring Semester*

## **Executive Office Administration (See Office Systems)**

## **Finance (See Business Administration)**

## **Fine Arts Option to Liberal Arts Transfer**

### **LA 140—ART HISTORY: PREHISTORIC TO GOTHIC**

3 credits

Art History is a survey of the major visual arts of the western world: architecture, painting and sculpture of the Paleolithic Era, Ancient Egypt and Mesopotamia, the Aegean, Greece and Rome, Early Christianity and Islam, the Romanesque and Gothic periods. The course is designed to help the student to understand the impulse behind the key monuments in the history of western art. Slide-lecture instruction, using Janson's *History of Art*. Three in-class hours weekly.

*Offered Fall Semester*

### **LA 142—PAINTING 1**

3 credits

Easel painting in oils or acrylics. Based on elementary understanding of the physical properties of oil and/or acrylic media, the course will emphasize individual expression within the framework of instruction in technical development, principles of pictorial composition and elements of visual representation. The main course objective is to increase students' sophistication toward aesthetic concerns and pictorial content while developing technical skills. No previous Art background is required. Five in-class hours weekly.

*Offered Fall & Spring Semesters*

### **LA 143—PRINTMAKING 1**

3 credits

Basic study of materials, techniques and aesthetic consideration peculiar to relief printmaking and a special segment on producing monotypes and monoprints from intaglio plates and woodblocks. Students will create a series of prints using these techniques and will develop an understanding of the printmaking process in general by studying historical and contemporary prints. No previous art background is required.

*Offered Fall & Spring Semesters*

### **LA 144—POTTERY 1**

3 credits

A basic studio course stressing creative use of clay and related materials. Students will learn hand-built and wheel-thrown pottery, glazing, firing, and studio maintenance and operation skills. Studio fee required. No previous Art background needed. Five in-class hours weekly.

*Offered Fall & Spring Semesters*

**LA 145—FIGURE DRAWING**

3 credits

The primary focus of this course is the study of the human figure as a vehicle for clarifying both perception and expression. A primary course objective is the acquisition by the student of a sense of the evaluative process inherent in making and viewing art works in various drawing media. Basic drawing helpful, but not a prerequisite. Five in-class hours weekly.

*Offered Spring Semester***LA 146—DESIGN: INTRODUCTION TO ART**

3 credits

A combination slide-lecture and studio workshop course which teaches the basic concepts in two-dimensional design, providing the foundation needed to understand and produce significant drawings, paintings, prints, and graphic expressions. Working in collage, students complete projects emphasizing the plastic elements individually (line, shape, texture, etc.) and the aesthetic principles (rhythm, balance, unity, etc.) Main objectives of the course include establishment of a sophisticated art vocabulary, and understanding of color theory, and the perception of spatial phenomena in their varied forms on two-dimensional surfaces. No previous art background is required. Five in-class hours weekly.

*Offered Fall Semester***LA 147—BASIC DRAWING**

3 credits

An introduction to a variety of drawing materials, techniques, and concepts. Emphasis is placed on developing each student's individual drawing strengths and making the student critically aware of the aesthetic soundness of a wide range of drawings, as each fulfills a different, expressive impulse. No previous Art background is required. Five in-class hours weekly

*Offered Fall & Spring Semesters***LA 148—EARLY CHILDHOOD ART EDUCATION**

3 credits

This course teaches students the ways in which children of pre-school and early-elementary ages use art activities as a means of growth in problem-solving skills, motor skills, and self-expression. The main course objective is to instill an understanding of the need children have for creative experiences in learning situations structured to allow for discovery, investigation, inventiveness, and individuality. Although the main body of the course is aimed at the child who falls into the so-called "norm," attention is given to the problems of the exceptional child. Lecture/workshop classes meet three hours weekly.

*Offered Spring Semester***LA 149—DRAWING COMPOSITION**

3 credits

Drawing will be approached as a basis of composition and training in observation. Emphasis will be placed on developing perceptual awareness and critical self-evaluation as means toward growth in one's abilities in visual self-expression. Students will be encouraged to explore areas of individual strengths and interests, using the figure as a primary subject. Five (5) in class hours weekly.

*Offered Spring Semester***LA 240—ART HISTORY: RENAISSANCE AND BAROQUE**

3 credits

A survey course in the major visual art expressions of Western man, covering the Late Gothic Period North of the Alps, the Renaissance, Baroque and Rococo art of Italy, Germany, France, Spain, Flanders, Holland, and England. Emphasis is placed upon understanding the impulse behind man's artistic expression; the link between works of art and the culture in which they are produced. Slide-lecture instructions, using Janson's *History of Art*. Art History 1 is not a prerequisite. Three in-class hours weekly.

*Offered Spring Semester***LA 242—PAINTING 2**

3 credits

Painting 2 is a continuation of Painting 1 offering the student the opportunity to explore a variety of media and techniques in painting. Students must explore variety of spatial concepts used by the painter, working the problems presented as the



## FINE ARTS

course content into their own framework of artistic direction. **PREREQUISITE:** Painting 1 or permission of the instructor. Six in-class hours weekly.

*Offered Fall & Spring Semester*

### **LA 243—PRINTMAKING 2**

3 credits

A continuation of Printmaking 1 with more advanced problems in technique and color process. Emphasis is placed on the development of individual direction. Five in-class hours weekly. **PREREQUISITE:** Printmaking 1 or permission.

*Offered Spring Semester*

### **LA 900—DIRECTED STUDY IN ART**

variable credit

Projects for advanced individual study by special arrangement with the instructor, and approval of the Department and Division Chairpersons. Students are expected to demonstrate willingness and ability to work on their own with minimal assistance.

*Offered Fall & Spring Semesters*

## Foreign Languages

### FRENCH

#### **LF 124—ELEMENTARY FRENCH 1**

3 credits

This introductory course is designed primarily for students who have had no previous experience with the language. Reading comprehension and mastery of the phonic patterns of the language are first objectives. Some basic grammar is introduced. Televised and semi-programmed materials help to accommodate the individual learning pattern and pace. Work with tapes is required. **NO PREREQUISITES.**

*Offered Fall Semester*

#### **LF 224—ELEMENTARY FRENCH 2**

3 credits

This is a continuation of Elementary French 1. Using televised materials with an accompanying text, grammar is studied in context and the first objective of the course is the development of oral comprehension and conversational skill in a limited context. Work with tapes is required. **PREREQUISITE:** Elementary French 1 or two units of French at entrance.

*Offered Spring Semester*

#### **LF 324—INTERMEDIATE FRENCH 1**

3 credits

The intermediate sequence is designed for students who have had a measure of experience with the language and seek to increase their control of the basic skills. Conversation, comprehension practices, grammar and guided composition, reading on both elementary and advanced levels make up the content of the course in a combination that reflects the background and interests of the group. Work with tapes or television is required. **PREREQUISITE:** Elementary French 2 or 3 units of French at entrance.

*Offered Fall Semester*

#### **LF 424—INTERMEDIATE FRENCH 2**

3 credits

This is a continuation of Intermediate French 1. Classes are conducted in French. Small group instruction provides an individualized, intensive learning experience in which the student shares in the selection of course priorities and assumes responsibility for his progress. Work with tapes or television is required. Some independent reading, oral reports, etc. **PREREQUISITE:** Intermediate French 1 or 4 units of French at entrance.

*Offered Spring Semester*

#### **LF 900—DIRECTED STUDY IN FOREIGN LANGUAGES**

Variable credit

Projects for advanced individual study by special arrangement with the instructor and approval of the Department and Division Chairpeople. Students are expected to demonstrate willingness and ability to work on their own with minimal assistance.



## SPANISH

**LF 120—CULTURAL SPANISH**

3 credits

This course is a combination of language and culture. It stresses the importance of oral communication and cultural awareness in practical settings concerning the growing monolingual Spanish-speaking population in our communities.

*Offered Fall & Spring Semester*

**LF 121—ELEMENTARY SPANISH 1**

3 credits

The approach to this course is strictly utilitarian, lessons centering around realistic themes and situations. Only a limited amount of grammar is introduced; the course concentrates on the acquisition of pragmatic vocabulary, verb patterns and idiomatic expressions used in daily situations.

*Offered Fall & Spring Semester*

**LF 122—CONVERSATIONAL SPANISH**

3 credits

The focus of this course is on speaking and understanding the contemporary idiomatic patterns of the native speaker. Special attention is given to pronunciation and simple conversational patterns. Contemporary themes are emphasized, giving police, firemen, medical personnel and other interested groups the ability to express themselves in Spanish.

*Offered Fall & Spring Semester*

**LF 221—ELEMENTARY SPANISH 2**

3 credits

A continuation of Elementary Spanish 1. Students are urged to start using basic conversational patterns and developing some reading skills. PREREQUISITE: LF 121 or 2 units at entrance.

*Offered Fall & Spring Semesters*

**LF 321—INTERMEDIATE SPANISH 1**

3 credits

A review of grammar will be given in this course; oral drill and conversation receive special attention. The reading skills are further developed. Students are introduced to basic writing skills. PREREQUISITE: 3 units of Spanish at entrance or LF 221.

*Offered Fall & Spring Semesters*

**LF 421—INTERMEDIATE SPANISH 2**

3 credits

A continuation of intermediate Spanish 1. The reading and writing skills receive special attention. A Spanish novel is required reading. Taught in Spanish. PREREQUISITE: 4 units of Spanish at entrance or LF 321.

*Offered Fall & Spring Semesters*

**LD 079—BASIC STUDY SKILLS IN SPANISH**

Variable credit

This course is designed to deal with study skills necessary for successful college work. Topics discussed include note taking, outlining, time allotment, preparation for exams, and the organization of a term paper. The second part is designed to acquaint students with information concerning job placement, resumes and interviews.

**French (See Foreign Languages)**

**General Business (See Business Administration)**

**General Business/Transfer Compact Option  
(See Business Administration)**

## Gerontology (See Human Services Associate/ Gerontology)

### Graphic Arts Technology

#### **GA 110—LINE PHOTOGRAPHY**

3 credits

Line photography serves to introduce the student to the basic reproduction photographic processes used in the printing industry. Beginning with line photography, the students will learn to process high contrast litho film using process cameras and processing techniques similar to those found in industry. In class the students will learn the basic theories of tone reproduction when the course focuses on elementary halftone reproduction.

*Offered Fall Semester*

#### **GA 120—TYPOGRAPHY & COPY PREPARATION**

3 credits

Typography and Copy Preparation is the first of a two-course sequence designed to acquaint the students with basic paste-up techniques and the elementary concepts of modern typography. The first half of a modular book of paste-up, typography, and layout projects will be required of every student. Presented during the technical lecture section of the course will be specific technical information on paste-up, typography, computer typesetting, and copyfitting.

*Offered Fall Semester*

#### **GA 210—BASIC LITHOGRAPHIC IMAGE ASSEMBLY**

3 credits

In Basic Lithographic Image Assembly, students learn basic single color stripping procedures as are commonly used in the offset printing industry. Using a modular project book, the students will learn elementary stripping techniques. By the time they are finished with the required series of projects, they will be qualified as strippers for single color work. The lecture section of the course will supplement the lab book by explaining specific information and extending beyond the scope of the book.

*Offered Spring Semester*

#### **GA 220—LAYOUT & COPY PREPARATION**

3 credits

Layout and Copy Preparation is the second part of a two-course sequence designed to acquaint the students with basic paste-up techniques and the elementary concepts of advanced copy preparation techniques used in multi-color design. The second half of a modular book of paste-up, layout, copy prep, and design projects will be required of every student. Presented during the lecture session of the course will be specific technical information useful for the thorough understanding of the projects.

*Offered Spring Semester*

#### **GA 230—ALPHABET KEYBOARD MASTERY**

1 credit

This course covers correct typewriting techniques and the development of speed and accuracy. The course is primarily designed to teach keyboard skills for manuscript typewriting, thereby preparing the student for computerized and photocomposition techniques applicable in this field.

*Offered Spring Semester*

#### **GA 310—HALFTONE PHOTOGRAPHY**

3 credits

Halftone Photography is a lecture and laboratory course of the photographic technology used in the conversion of continuous tone original copy into press-ready screened reproductions. The lecture portion of the course, beginning with a brief history of the processes involved, will quickly move into discussion of the contemporary theories of the photographic process, halftone screen conversion, sensito-metry, and color reproduction. The laboratory portion of the course will consist of experiments ranging from basic halftone exercises through tonal modification techniques, from duotones through simple color separation.

*Offered Spring Semester*

**GA 320—ADVANCED COLOR LITHOGRAPHIC IMAGE ASSEMBLY**

3 credits

Advanced Color Lithographic Assembly is a lecture and laboratory course in what is commonly known in the printing industry as "color stripping". The lecture portion of the course will provide a theoretical foundation for the sophisticated and complex techniques involved in contemporary color lithographic image assembly. The detailed examination of press and bindery requirements, an in-depth survey of materials in use, and a comprehensive study of advanced contacting procedures. The laboratory portion of the course will be comprised of increasingly more difficult and complex projects ranging from simple color lithographic image assembly to multiple complementary flats, chokes and spreads, duplicates, and 'fake' color separation. **PREREQUISITES:** GA 110 and GA 210.

*Offered Fall Semester*

**GA 340—PRODUCTION TECHNIQUES 1**

3 credits

All process courses taught in the graphic arts technology program are based on progressively more difficult exercises which the student performs in order to reach a predetermined achievement level. Production technique courses are designed to provide the student with actual live-job production responsibilities in the areas of layout, camera & stripping, platemaking and presswork.

*Offered Fall Semester*

**GA 350—GRAPHIC DESIGN**

3 credits

A course designed to further develop the student's ability to create layouts for advertising. The student gains further knowledge in the arrangements of headlines, copy blocks, photographs, art work, logotypes, borders, and other typographic devices that serve as a preview for the client and a guide for the illustrator, letter artist, engraver, typesetter and printer. The lab portion of the course will acquaint the student with the mechanical operations of the typographer, artist, photographer, process cameraman, and pressman in relation to what must be specified when ordering any of their services in the production of an advertisement. **PREREQUISITES:** GA 120 and GA 220.

*Offered Fall Semester*

**GA 360—OFFSET PRESSWORK 1**

3 credits

Offset Presswork 1 & 2 is a series of courses designed to familiarize the student with the theory and operation of offset lithographic presses. Presswork 1 includes the elements and components of a press in technical and theoretical detail. Laboratory experiences are designed to familiarize the student with the complete set up of a small duplicator press through the use of a modular project. **PREREQUISITES:** GA 110 and GA 210.

*Offered Fall Semester*

**GA 370—PRINTING MANAGEMENT**

3 credits

This course builds a framework to aid in making correctly the many decisions which are the essence of good management of a printing plant, large or small. The principles of finance, accounting procedures, cost rate establishment and control supervision, industrial relations, estimating, pricing and planning for growth are stressed by basic theory and illustration of the application of this theory.

*Offered Fall Semester*

**GA 380—CHEMISTRY OF LITHOGRAPHY 1**

3 credits

A study of the fundamental principles of chemistry in relation to the properties, composition and structure of matter, the changes that matter undergoes and the laws governing the changes. Theories of chemical reactions, chemical bonding & molecular structure are covered in preparing the student for advanced work in the lithographic process. 3 one-hour lectures per week.

*Offered Fall Semester*

**GA 410—CHEMISTRY OF LITHOGRAPHY 2**

4 credits

Topics in chemistry relating to Graphic Arts including photography and photographic processes, colors, inks and printing. Laboratory. **PREREQUISITE:** GA 380 Chemistry of Lithography 1.

*Offered Spring Semester*



## **GA 450—PRODUCTION TECHNIQUES 2**

3 credits

A continuation of GA 340. PREREQUISITE: GA 340.

*Offered Spring Semester*

## **GA 460—GRAPHIC DESIGN/PUB AND PACK**

3 credits

The objective of this course is to demonstrate what typography is and particularly what it is to the modern graphic designer. The student is made aware of the many influences that have shaped modern typography, with particular emphasis on the effects of technology and contemporary art movements. Laboratory work includes creative projects in typographical composition for effectiveness and aesthetic value. PREREQUISITES: GA 120, GA 220.

*Offered Spring Semester*

## **GA 470—OFFSET PRESSWORK 2**

3 credits

A continuation of Offset Presswork 1. Offset Presswork 2 consists of discussing technical and theoretical topics such as make ready systems, press standardization, plates, blankets, and pressroom chemicals. The lecture series ends with a discussion of web presses. Laboratory experiences are designed to acquaint the student with high quality presswork techniques including the printing of process color utilizing full size offset presses. PREREQUISITES: GA 110, GA 210, GA 360.

## **GA 480—PRINTING PRODUCTION MANAGEMENT**

3 credits

A continuation of Printing Management. The principles of production control, planning, purchasing, inventory control and scheduling, are stressed by basic theory and case study application to solve basic production problems. PREREQUISITE: GA 370.

*Offered Spring Semester*

# Heat/Power/Air Conditioning Technology

## **HP 110—THEORY OF CONTROLS**

3 credits

A course designed to deal with the basic theories and concepts required by both air-conditioning and heating servicemen. Topics covered include: Basic electricity, meters, principles of motor operation, transformers and relays, along with an introduction to control circuits. These studies are essential in order that the individual comprehends the control circuits to which he will be exposed in his future courses.

*Offered Fall Semester*

## **HP 120—MECHANICAL SKILLS & PROCEDURES 1**

1 credit

A course that deals with the development of the manual and technical skills required in the Heat/Power/Air Conditioning industry. Attention is given to current principles and practices that apply to the care and use of hand tools and measuring devices, basic machines, tubing and piping layouts, soldering and welding construction, metal fabrication, equipment services and installation, fundamental electric circuit wiring and field service training.

*Offered Fall Semester*

## **HP 130—ENGINEERING GRAPHICS 331**

1 credit

A course that deals with the breakdown of a 3 dimensional object into simpler 2 dimensional views. These views are used to show internal shapes and dimensions of the object. Emphasis is placed on the basic skills such as proper use of drafting instruments and producing neat, concise drawings.

*Offered Fall Semester*

## **HP 210—HYDRONIC LAYOUTS & CONSTRUCTION**

3 credits

A Laboratory course designed to introduce the student to steam and hot water heating system installation layout. Topics include specifications for pipe and related components, review of metal tubing and fittings, architectural design and hydronic layout will allow the student to express his/her knowledge of subject matter.

*Offered Spring Semester*



**HP 220—COMBUSTION CONTROL CIRCUITS**

3 credits

Domestic heating control systems for steam, forced warm air and forced hot water, and the components which make up each control system are covered in detail. Residential oil burners and their components, thermostats, and basic trouble-shooting are also covered during this semester. **PREREQUISITE:** HP 110.

*Offered Spring Semester***HP 230—MECHANICAL SKILLS & PROCEDURES 2**

1 credit

An advanced course that is predominantly a laboratory program. Instruction is directed toward the student achieving competency in specialized skill areas involving procedure, technique, experiment, application, service and test. Emphasis is placed on laboratory assignments scheduled specifically to allow for adequate work experience. The various training phases are erection and fabrication of residential thermal devices, unit assembly of hardware components, combustion equipment installation, control safeguard selection and wiring hookup, efficiency testing of units and the documentation of results. **PREREQUISITE:** HP 120.

*Offered Spring Semester***HP 240—PRINCIPLES OF REFRIGERATION**

3 credits

The science of refrigeration is based on physics, chemistry and the transfer of heat which forms the foundation for the understanding of refrigeration process. After these principles are learned in the first few weeks, emphasis is placed on the refrigeration system components that make up the cycle. A study of the properties of refrigerants used in the different applications for cooling is presented, as are the tools and equipment necessary in the servicing of these units that includes: food storage, medical procedures, industrial applications, and air conditioning systems.

*Offered Spring Semester***HP 310—COMMERCIAL PROGRAMMING CONTROLS**

4 credits

Combustion theory and testing is introduced and the student learns how to run a proper test and to interpret the results. Basic electronic and programming controls used in the commercial-industrial heating industry are introduced. A number of these controls are fully analyzed to illustrate their internal operations. Other areas which are fully covered include: Industrial wiring diagrams for gas, oil and a combination of gas/oil burners, and single phase and three phase motor starters. Emphasis is placed on the use of manometers, gages and electrical meters in testing and servicing equipment. **PREREQUISITE:** HP 220.

*Offered Fall Semester***HP 320—HEATING SYSTEM DESIGN**

3 credits

A lecture course designed to acquaint the student with the proper principles used in designing hot air heating systems. A thorough coverage is made of heat transfer through building materials essential in the calculations of heat losses, for both residential and commercial structures. Instruction is given in the layout and construction of heating hot air systems. The student will develop the knowledge required to design efficient heating systems.

*Offered Fall Semester***HP 330—POWER PLANT OPERATION 1**

3 credits

To understand the principles of high pressure power plants and their related equipment, an indepth study is made of the heat processes involved; this includes the vaporization of liquids and the computations of their properties through the use of steam tables and other charts. The properties of air are studied for the proper burning of fuels, as is water because of its corrosive effects on the steel used in the fabrication of power boilers. Power plant layout, high pressure steam generators and their related equipment are extensively covered. The STCC power plant, and others are used as functioning laboratories.

*Offered Fall Semester***HP 340—FUNDAMENTALS OF AIR CONDITIONING**

3 credits

A study of the thermal properties of air and water vapor mixtures and the plotting of these properties on psychromatic charts to calculate changes of the conditions to satisfy the comfort of humans and other industrial applications. These properties

## HEAT/POWER/AIR CONDITIONING TECHNOLOGY

encompass the heating, humidifying, mixing, calculating cooling loads, and the balancing and control of air conditioning systems. PREREQUISITE: HP 240.

*Offered Fall Semester*

### **HP 410—ADVANCED HEATING SYSTEM DESIGN**

3 credits

This course is designed to acquaint the student with the proper principles used in designing hydronic heating systems. Instruction is given in the layout and construction of series loops, and one pipe venturi forced hot water systems. In addition, the sizing and piping of indirect domestic hot water heaters and industrial tank type heaters is covered. PREREQUISITE: HP 320.

*Offered Spring Semester*

### **HP 420—INDUSTRIAL CONTROL APPLICATIONS**

4 credits

Industrial oil, gas and combination burners are studied along with solid state primary and draft controls which are found in today's industrial heating plants. Periodically, factory representatives are invited to lecture on the latest up-to-date equipment. Thus the student becomes aware of the changes constantly occurring in the heat and power field. PREREQUISITE: HP 310.

*Offered Spring Semester*

### **HP 430—POWER PLANT OPERATION 2**

3 credits

With the principles learned in Power Plant Operation 1, this course is designed to involve the operation, maintenance, code requirements and the efficiencies of power plants. Attention is directed to steam generator construction, safety devices, pumps, feedwater heaters, piping systems and traps. Boiler feedwater treatment has become a scientific chemical procedure to condition the boiler water preventing scale, corrosion, caustic embrittlement, priming and foaming that causes carry-over. Preparation is made for a Massachusetts State Operator's license and a N.I.U.L.P.E. PREREQUISITE: HP 330.

*Offered Spring Semester*

### **HP 440—AIR CONDITIONING LABORATORY**

3 credits

Analyzing, trouble-shooting & servicing refrigeration and air conditioning systems are emphasized in this course. Electric, pneumatic controls and protection devices: freezstats, thermostats, capacitors, low oil, high and low head pressure cut-outs and compressor overload devices are studied in detail. Cooling towers, both mechanical & natural draft with parabolic designs are featured, as is water chemistry with chill and condensor water treatment including: rust inhibitors, algae control and filtering processes. PREREQUISITE: HP 340.

*Offered Spring Semester*

## History

### **NH 100—SURVEY OF EARLY WESTERN CIVILIZATION**

3 credits

Origin and development of Western Civilization beginning with the classical civilizations of Greece and Rome, continuing through early Christianity and the Middle Ages, and concluding with the Renaissance and Reformation.

*Offered Fall & Spring Semester*

### **NH 110—SURVEY OF EARLY U.S. HISTORY**

3 credits

History of the United States from the Colonial period to the end of the Civil War. A topical approach is followed within a chronological framework centering on the colonial origins of American society, its separation from England, the subsequent process of nation building and the development of the Civil War during the Ante-Bellum period.

*Offered Fall & Spring Semester*

### **NH 200—SURVEY OF MODERN WESTERN CIVILIZATION**

3 credits

Modern Western Civilization from the end of the Middle Ages to the present. Begins with Seventeenth Century Europe and discusses the beginnings of modern science; the Enlightenment and the political revolutions in England, America, and France; the

industrial and intellectual revolutions of the Nineteenth Century; the World Wars of the Twentieth Century and developments which follow in the post-war period. No Prerequisites.

*Offered Fall & Spring Semester*

## **NH 210—SURVEY OF MODERN U.S. HISTORY**

3 credits

History of the United States from the Reconstruction period to the present. Consideration will be given to the impact of the Industrial Revolution on Late Nineteenth Century America and the influence of war and reform on the nation during the Twentieth Century. A social-cultural and new political approach will be utilized. No Prerequisites.

*Offered Fall & Spring Semester*

## **NH 300—HISTORY OF CIVILIZATION**

3 credits

This course follows the development of China, Japan, India, Africa, Eastern Europe, and South America from 1650 to the present. It will examine scientific, economic, social and cultural trends, with particular emphasis on the influence of religion and philosophy that is not based on the Judeo-Christian ethic.

## **NH 900—DIRECTED STUDY IN HISTORY**

Variable Credit

Semester hour credit will vary from one to three, depending upon the written, agreed-upon, approved, student-professor contract.

# Human Services Associate Generalist Option

## **AM 101—HUMAN SERVICES 1**

4 credits

Emphasizing the multi-disciplinary approach, coordinated academic studies and supervised practicum focus on the duties and responsibilities of the Human Services Associate. Lectures, discussions, group participation and supervised community agency assignments introduce the student to the competencies, theory and practice of human services.

*Offered Fall Semester*

## **AM 201—HUMAN SERVICES 2**

4 credits

Continuing to participate in lectures, discussions and small groups on campus, the student is concurrently assigned supervised practicum in a cooperating community service agency. This placement will average four hours each week including travel time. Through coordinated academic studies and field work, the student is expected to demonstrate the acquisition of competencies essential for a human services provider. Simultaneously the student is provided opportunities to test personal resources in supervised settings. **PREREQUISITE:** AM 101.

*Offered Spring Semester*

## **AM 300—HUMAN SERVICES 3**

9 credits

Focusing on the practice of human services, this generalist concentration coordinates theoretical concepts through campus forum, introductory video techniques and supervised practicum. Campus forum combines discussion and lecture enabling the student to receive direct supervision and guidance in an academic setting. Video techniques are introduced as an educational resource for the generalist in human services. The Agency placement will average twelve hours each week. Qualified Agency Personnel supervise and evaluate Agency assignments and demonstration of competencies. The student continues to have opportunities to test and evaluate personal resources in supervised setting. **PREREQUISITES:** AM 101, AM 201, Enrollment in AM 301.

*Offered Fall Semester*

## **AM 301—HUMAN SERVICES SEMINAR 1**

3 credits

The focus of this course is the small group. Weekly seminars are held. Students serve as group leaders and participants. Through direct experience, the student becomes aware of the dynamics present in small group interaction as well as the



## HUMAN SERVICES ASSOCIATE

planning essential for productive group work. Video techniques are an integral part of the course. Three sections must be attended weekly. PREREQUISITES: AM 101, AM 201, Enrollment in AM 300 or AT 101.

*Offered Fall Semester*

### **AM 311—APPLIED LEGAL CONCEPTS: HUMAN SERVICES**

1 credit

Legal concepts applied to the planning and delivery of human services at the local, state, regional and national level will be reviewed. Included are those laws with general and specific implications for both the consumer and provider of services. PREREQUISITES: BB 311. COMPLETION OF AM 101, AM 201 and concurrent enrollment in AM 300 or AT 101 and AM 301.

### **AM 400—HUMAN SERVICES 4**

9 credits

Continuing to focus on the practice of human services, this course correlates campus forum, video techniques and supervised practicum essential for the generalist. Direct supervision and guidance are provided in an academic setting through conferences, discussions and lectures. The student is provided supervised opportunities to utilize video as an educational resource for generalized human services applications. Agency placement will average fourteen hours each week. Qualified Agency personnel supervise and evaluate Agency assignments and demonstration of competencies in practicum. Through increased duties and responsibilities the student is able to define appropriate choices for post graduation placement. PREREQUISITES: AM 101, AM 201, AM 300, AM 301. Enrollment in AM 401.

*Offered Spring Semester*

### **AM 401—HUMAN SERVICES SEMINAR 2**

3 credits

Continuation of small group work as described in Course No. AM 301. PREREQUISITES: AM 101, AM 201, AM 301, AM 300 or AT 101. Enrollment in AM 400 or AT 201.

*Offered Spring Semester*

## Human Services Associate Gerontology Option

### **AT 101—GERONTOLOGY 1**

9 credits

Concentrating on the practice of gerontology as a human service, this course coordinates a campus forum, introductory video techniques and supervised practicum. Current issues, relevant to needs of the aging population, are addressed. Campus forum combines discussion and lecture enabling the student to receive direct supervision and guidance in an academic setting. Video techniques, used as an educational resource for gerontology, are introduced. The Agency placement will average twelve hours each week. Qualified Agency personnel supervise and evaluate agency assignments. Through the demonstration of competencies the student continues to have opportunities to test and evaluate personal resources in supervised settings. PREREQUISITES: AM 101, AM 201. Enrollment in AM 301.

*Offered Fall Semester*

### **AT 201—GERONTOLOGY 2**

9 credits

Continuing to concentrate on the practice of gerontology, this course correlates campus forum, video techniques and supervised practicum. Direct supervision and guidance are provided in an academic setting through conferences, discussions and lectures. The student is provided supervised opportunities to utilize video as an educational resource for specific gerontology applications. Agency placement will average fourteen hours each week. Qualified agency personnel supervise and evaluate agency assignments and demonstration of competencies in practicum. Through increased duties and responsibilities the student is able to define appropriate choices for post graduation placement. PREREQUISITES: AM 101, AM 201, AM 301, AT 101. Enrollment in AM 401.

*Offered Spring Semester*



## Humanities

(See Art, English, Foreign Languages, Music, Philosophy)

## Instrumentation Technology

### IT 120—GRAPHICS FOR INSTRUMENTATION TECHNOLOGY

2 credits

This course emphasizes drafting form, geometric construction, orthographic projection, dimensions and views. The latter portion includes electrical, mechanical and electronic symbols plus circuit diagrams, wiring schematics and chassis layouts.

*Offered Spring Semester*

### IT 310—CONTROL PRINCIPLES 1

4 credits

In this course, the characteristics of controlled process static and dynamic conditions are reviewed; analogous systems of units are presented; first and second order responses are treated; block diagrams as applied to analog computers are discussed; and finally, the fundamentals of analog computers are presented. Applications to typical processes will be given.

*Offered Fall Semester*

### IT 320—HYDRAULICS AND PNEUMATICS

3 credits

This course provides a fundamental understanding of the physical principles of hydraulics and pneumatics in a logical building-block manner, along with a practical working knowledge of the components normally utilized in designing, installing, operating, and maintaining hydraulic and pneumatic systems.

*Offered Fall Semester*

### IT 410—INSTRUMENT REPAIR AND TROUBLE SHOOTING

3 credits

This course provides the time and opportunity for students to work on instruments observing their design, fabrication, assembly testing and test fixtures. The student is expected to cultivate the art of recognizing a correctly operating instrument and an improperly operating unit. The training of his judgment to assess and repair or replace a defective component is crucial to his proper performance on the job.

*Offered Spring Semester*

## Landscape/Plant Science Technology

### GL 110—TREES IN THE LANDSCAPE

3 credits

A course dealing in tree identification & use, as related to landscape work. Important types, both native and introduced, are discussed. Limited to trees generally hardy in the New England area. Representative types are discussed during laboratory sessions. Lectures deal with general topics concerning tree use. Field trips, both on and off campus, are used to view the trees discussed. One hour lecture, two two-hour labs.

*Offered Fall Semester*

### GL 120—PRINCIPLES OF HORTICULTURE

3 credits

A basic course in general horticulture, introducing the student to the fundamentals of soil study and use, insect and disease control and plant production techniques. The lectures cover the theoretical aspects of horticulture and the laboratories used for field trips and practical work.

*Offered Fall Semester*

### GL 210—PRESENTATION TECHNIQUES

3 credits

A course in mechanical drafting, stressing the media and techniques commonly used in the preparation of landscape plans. The use of instruments, lettering and line techniques is covered first, followed by the development of isometric and perspective drawings. Working in 3-dimensions is stressed, so that the student may best

visualize spatial relationships in future landscape design courses. Three two-hour labs.

*Offered Spring Semester*

## **GL 220—TURF MANAGEMENT**

3 credits

The study and identification of turf grasses as used in the New England area. Much emphasis is placed upon the best use of the types involved. Topics in the lectures include soil and fertilization requirements, drainage and irrigation, best turf types, grass and seed identification, maintenance and renovation, and disease and insect control. The laboratories are involved in soil testing, turf growing, maintenance techniques and field trips. Two hour lecture, one two-hour lab.

*Offered Spring Semester*

## **GL 310—SHRUBS IN THE LANDSCAPE**

3 credits

A continuation of Botany 2, covering the identification and use of the commonly used native and introduced shrubs and vines in this area. Emphasis is placed upon the best use of the types involved. Lectures are concerned with utilization of plant features such as flowers and fruits and with effects of the environment on the plants discussed. Laboratories are used for the discussion of specific plants. One hour lecture, two two-hour labs.

*Offered Fall Semester*

## **GL 320—ARBORICULTURE**

3 credits

A course dealing with the basic aspects of arboriculture. The lectures are concerned with tree growth and maintenance and the laboratories are used to instruct in tree climbing, pruning, and repair and feeding techniques. Two hour lecture, one two-hour laboratory.

*Offered Fall Semester*

## **GL 330—LANDSCAPE DESIGN 1**

3 credits

A course in residential landscape design stressing basic design techniques and elements. Topics covered in lecture are line, shape, form, texture, pattern, color, the processes of design, the development of outdoor spaces and design presentation. Design problems in lab deal with entry ways, driveways, outdoor living areas, play areas, private gardens and the orientation of structures on the site. PREREQUISITE: GL 210.

*Offered Fall Semester*

## **GL 350—LANDSCAPE OPERATIONS (PLANTING)**

3 credits

This course deals with the principles involved in estimating, carrying out and maintaining landscape work. The lectures are used to introduce and discuss the work areas involved and laboratory time spent in moving and planting trees and shrubs, estimating work and the use of work. Two hour lecture, one two-hour laboratory.

*Offered Fall Semester*

## **GL 410—PLANT PROPAGATION**

3 credits

A course dealing with the procedures used in propagating and growing plant materials. Lectures deal with the theoretical aspects of growing and the laboratories are devoted to greenhouse and field work. Several field trips are taken to commercial nursery operations in the area. Two hour lecture, one two-hour lab.

*Offered Spring Semester*

## **GL 420—LANDSCAPE DESIGN 2**

3 credits

A continuation of Landscape Design 1 stressing presentation and analysis. The areas dealt with are urban shopping and business spaces, small office buildings, schools and playgrounds, and parking areas. PREREQUISITE: GL 330.

*Offered Spring Semester*

## **GL 430—EARTH FORMS & STRUCTURES**

3 credits

A study of the equipment, materials and methods used in constructing landscape features such as walls, walks, drives, fences and terraces. Considerable field work is involved, in which the students lay out and construct features as mentioned above. Two hour lecture, one two-hour laboratory. PREREQUISITE: GC 305 Surveying 721.

*Offered Spring Semester*

**GL 450—ENTOMOLOGY/DISEASE CONTROL**

3 credits

An introduction to the study of insects and diseases affecting ornamental plants. Both identification and eradication of common plant pests will be discussed. Cultural & biological means of control, rather than the use of chemicals will be stressed.

*Offered Spring Semester*

## Laser Electro-Optics Technology

**EL 320—INTRODUCTION TO LASERS**

4 credits

This course is made up of three one hour lecture sessions and a three hour laboratory session. The course begins with an introduction to light, the atom, emission processes, and stimulated emission of radiation. Next, laser output characteristics and modification, materials, components and industrial laser types are discussed in detail. Finally, a description of major industrial laser applications is given. Safety and laboratory procedures are also covered. The lab section will loosely follow the lectures and some projects are constructed. Senior standing.

*Offered Fall Semester***EL 330—GEOMETRICAL OPTICS**

4 credits

This course is the first of a two semester sequence covering basic optical theory and components. Each course consists of three hour lecture sessions and a three hour lab. Geometrical optics deals with the rectilinear propagation of light and the elementary treatment of image formation, lenses, mirrors, prisms, fiber optics, ray tracing, aberrations, optical system design, and optical instruments. The laboratory section parallels the lectures and familiarizes the student with optical laboratory components and procedures. Senior standing.

*Offered Fall Semester***EL 410—LASER PROJECTS**

4 credits

Students working in groups will construct one of the projects listed below under the guidance of the instructor. Each student is required to maintain a laboratory notebook on specific work performed. The notebook will be evaluated weekly by the instructor. Also, lectures on topics such as electronic layout and assembly and error and statistical evaluation of data help to round out the student's knowledge of laboratory procedures. Projects include Computer Assisted Spectroradiometer, CO<sub>2</sub> Laser, Nd:YAG laser, Optical Communications, Holography, Vacuum Evaporation Techniques, and others. Senior standing and EL 320, EL 330.

*Offered Spring Semester***EL 420—WAVE OPTICS**

4 credits

Three major topics are studied in this course: wave optics, properties of light and matter, and the optics of transformations. The majority of the course is dedicated to wave optics and the study of diffraction and interference. In dealing with the properties of light and matter, polarization and optical boundaries are discussed. The optics of transformations deals with Fourier transform spectroscopy, transfer functions, optical data processing, and holography. Laboratory exercises will closely parallel classroom discussions and should help bridge the gap between theory and practical use of the concepts expressed. Senior standing and EL 320, EL 330.

*Offered Spring Semester*

## Law Enforcement/Criminal Justice

**NL 100—CRIMINAL PROCEDURES 1**

3 credits

To familiarize the student planning a career in law enforcement with the Constitutional requirements and safeguards attendant throughout the criminal process, from investigation through arrest, interrogation, indictment, trial, and sentencing. Included is an in-depth review of the Bill of Rights and its influence in modern society. Heavy emphasis is placed on actual case study and review of recent Supreme Court decisions, especially as related to practical situations and problems confronting Law



## LAW ENFORCEMENT/CRIMINAL JUSTICE

Enforcement personnel. Selected readings focus on practical application to Constitutional principles to practical situations.  
*Offered Fall Semester*

### NL 110—INTRODUCTION TO CRIMINAL JUSTICE

3 credits

An introduction and basic survey of criminal justice and the court systems, both state and federal. The course explores the concept of bail, the functions and roles of the Judge, Prosecutor, Grand Jury, Defense Attorney, and Public Defenders, and sentencing in the courts. Also examined are the functions and objectives of the Probation Officer and Parole Office, especially as related to rehabilitation of the offender. The role of the policeman in modern society is discussed and explored in detail.  
*Offered Fall Semester*

### NL 200—CRIMINAL PROCEDURES 2

3 credits

Continuation of Criminal Procedures 1 NL 100. PREREQUISITE: Criminal Procedures 1 NL 100.  
*Offered Spring Semester*

### NL 230—CRIMINAL EVIDENCE

3 credits

An analytical study of the rules of evidence, including such general areas of Relevancy and Materiality, Hearsay Evidence, Introduction of Writings, Competency and Privilege, and Parole Evidence Rule. Probative Matter legally presented at the trial of a criminal case is given special attention. Also examined are rules concerning the admission of evidence in such specific areas as Search and Seizure, Pre-Trial Identification, admission of confessions, electronic surveillance, presumptions and privileges. PREREQUISITES: Intro to Criminal Justice NL 110 or permission of Department Chairperson.  
*Offered Spring Semester*

### NL 300—CRIMINAL LAW 1

3 credits

This course explores and examines the substantive law of crimes, including the general and special areas of Criminal Laws. Of special interest is a survey of crimes against the person, crimes against property, parties to crimes, defenses based on justification, and the nature of the criminal act and conduct. Emphasis is placed on analysis of elements of particular crimes, offenses, and punishments through an examination of the statutes and case example. PREREQUISITE: Intro to Criminal Justice NL 110 or permission of the Department Chairperson.  
*Offered Fall Semester*

### NL 340—CRIMINAL INVESTIGATION

3 credits

An introduction to field investigation, including conduct at the scene of the crime, interviewing and interrogation of witnesses and suspects, the use of informants, and techniques of surveillance. Emphasis is placed on special investigative techniques and on court procedures of the police case.  
*Offered Fall Semester*

### NL 400—CRIMINAL LAW 2

3 credits

Continuation of Criminal Law 1 NL 300. PREREQUISITES: Criminal Law 1 NL 300 and Intro. to Criminal Justice NL 110 or permission of Department Chairperson.  
*Offered Spring Semester*

### NL 405—CURRENT ISSUES IN LAW ENFORCEMENT

3 credits

This course explores current issues in the field of Law Enforcement and Corrections. Included as major topics to be studied are the causes, effects, and treatment of drug addiction in society, the correctional system generally in America, work release programs, prisoners' rights, women's rights, the philosophy of the juvenile justice system, victimology, crime in the society, and a discussion of rehabilitation and reintroduction of the offender in contemporary society. These issues will be explored from the perspective of the social sciences and their sociological context.  
*Offered Spring Semester*

### NL 411—JUVENILE PROCEDURES

3 credits

This course examines the role of the police in delinquency prevention and the make-up of Youth Service Division within the Police Department. Emphasis is on theory, administration, control, treatment, confinement, community resources, relationships with the public and the juvenile court.



**NL 412—LAW ENFORCEMENT PHOTOGRAPHY**

3 credits

The objective of this course is to give police officers an introduction to photography in law enforcement and police work generally. Various photographic techniques are illustrated in relation to their possible use in several areas of law enforcement. Emphasis is on photography as a valuable tool in law enforcement.

**NL 413—PAROLE, PROBATION & REHABILITATION**

3 credits

This course familiarizes the student planning a career in Law Enforcement with laws, rules, and regulations attendant with Probation and Parole and Corrections, as well as with the basic concepts and mechanics of each. The course also examines the organizational structure of Probation, the Parole Board, and the Department of Correction in Massachusetts. Theories employed in the sentencing and rehabilitation of different kinds of offenders will be studied, along with an analysis of rehabilitation of the offender in the community versus in penal institutions. Utilization and effectiveness of work-release programs, half-way houses and treatment centers for drug offenders and alcoholics will be considered.

**NL 415—POLICE/COMMUNITY RELATIONS**

3 credits

This course will examine the relationship between police and the community they serve. This relationship has often been marked by hostility and lack of confidence in the police, particularly in minority group areas. How this hostility is reflected in day-to-day police operations, recruiting, morale and safety of the individual officer will be examined through the course readings, lectures and discussion. The response of police to these pressures will also be examined. The problem of police ethics and the role this play in developing a police image in the community will be explored. What part police/press relations play in the development of police/community relations will be reviewed through actual police-related news stories. The ultimate question of freedom versus authority, of the police state versus constitutional democracy, will be examined in relationship to the course reading and discussions.

**NL 450—LAW ENFORCEMENT MANAGEMENT & PLANNING**

3 credits

Consideration of police problems at the administrative level, including coordination of all branches of a police department. An evaluation of line, staff, and auxiliary functions and the interrelationship of each. The purpose, need, and scope of planning in the police operation, including staffing, correction of data and use of data processing.

*Offered Spring Semester***NL 475—LAW ENFORCEMENT SEMINAR**

3 credits

This course reviews and correlates all major areas of study covered in the Law Enforcement/Criminal Justice curriculum. Through general discussion and selected readings, the course explores and re-examines all major areas in Law Enforcement with the aim of consolidating previously attained knowledge and skills. The course seeks to provide the student with a distinct perception, overview and evaluation of the Criminal Justice process, including the basic trial format and courtroom procedure.

## Legal Office Administration (See Office Systems) Machine Design Technology

**FD 110—DRAFTING & DESIGN 1**

4 credits

Principles of drafting to include orthographic projection, dimensioning, sectioning, auxiliary views, pictorial drawing, detailing of parts. **PREREQUISITE:** High School Algebra.

*Offered Fall Semester***FD 210—DRAFTING & DESIGN 2**

4 credits

Detailing from layout drawings, assemblies, fits and tolerances, mechanical components and systems, design and working drawings. **PREREQUISITE:** FD 110.

*Offered Spring Semester***FD 220—MECHANICS**

4 credits

A basic course studying forces, how they act and are resolved for equilibrium conditions. Moments are determined in relation to a point. Frictional forces and their effects are also studied along with trusses, centroids and moments of inertia.

*Offered Spring Semester*

## MACHINE DESIGN TECHNOLOGY

### **FD 230—KINEMATICS**

3 credits

The theory of linkages, cams, gears, belt and pulley drives is studied. Calculations of velocities, acceleration and speed of the various components are determined relative to the design concept being studied.

*Offered Spring Semester*

### **FD 310—DRAFTING & DESIGN 3**

4 credits

Machine Design principles are studied and methods of calculating the required size and shape of various machine parts are developed. Selection of proper material is given consideration, stress, strain, design stresses, keys and fasteners, threaded members, welded and riveted connections and shafts are considered. The principles of motions, velocities, accelerations of various linkages are considered. **PREREQUISITE:** FD 210.

*Offered Fall Semester*

### **FD 320—DESIGN OF MACHINE ELEMENTS**

4 credits

This course is a continuation of study of strength of materials. Stress concentration factors, endurance, fatigue are determined in relationship to springs, couplings, drive gears and bearings. Calculations are made for the proper design and selection in relationship to machinery.

*Offered Fall Semester*

### **FD 410—DRAFTING & DESIGN 4**

4 credits

The course involves the study of disk and cylindrical cams, gears, gear trains, pulleys and couplings. Interference, contact ratio, strength and dynamic loading of gears are considered and simple reverted, compound and epicyclic gear trains are worked out in detail. The student is given the opportunity to integrate knowledge acquired during the machine design program by carrying out projects in which he designs complete machines or subassemblies. He is required to analyze the problem, gather pertinent information, carry out the necessary mathematical operations, make working drawings and check his work. Throughout the course, he is encouraged to use his own judgment and initiative to the maximum extent possible. Students meet for two one-hour lectures and two three-hour labs per week. **PREREQUISITE:** FD 310.

*Offered Spring Semester*

### **FD 450—PROJECT DESIGN LAB**

3 credits

The student will have the opportunity to put together all his knowledge obtained on various projects assigned by the instructor. He will do the design and rectify by calculations and computations in relationship to this along with the economical aspects. **PREREQUISITE:** FD 310.

*Offered Spring Semester*

Management  
(See Business Administration)

Marketing  
(See Business Administration)

Math and Natural Sciences  
(See Engineering Transfer, Computer Science  
Transfer, Biological Sciences,  
Chemistry, Mathematics, Physics)

Mathematics

### **MM 071—MATHEMATICS**

1 credit

The concept of whole numbers and the place value system. Addition, subtraction, multiplication and division of whole numbers. Exponents, perfect square roots, primes, composites and prime factoring.

**MM 072—MATHEMATICS**

1 credit

Fractions and decimals. Addition, subtraction, multiplication and division of both fractions and decimals. Reducing fractions and converting fractions to decimals. PREREQUISITE: MM 071 or its equivalent.

**MM 073—MATHEMATICS**

1 credit

Changing percentage to fractions and fractions to percentage. The solution of the various types of percentage problems. An introduction to denominate numerals. Elements of plane geometry. PREREQUISITE: MM 072 or its equivalent.

**MM 074—MATEMATICAS**

1 credito

Course contents same as MM 071. El concepto denumeros enteros positivos, el cero y el sistema de lugar, para el valor. Suma, resta, multiplicacion & division de numeros enteros positivos. Exponentes cuadrado perfector, raiz cuadrada, numerous primos, numeros compuestos & factorizacion prima.

**MM 075—MATEMATICAS**

1 credito

Course contents same as MM 072. Fraciones, & decimales. Suma, resta, multiplicacion & division de ambos, decimales & fraciones. Reduciendo fraciones & convirtiendo fraciones a decimales. PREREQUISITO: MM 074 o su equivalente.

**MM 076—MATEMATICAS**

1 credito

Course contents same as MM 073. Camblar porcientos a fraciones & fraciones a porciento. La solucion de varios tipos de problemas de porcientos. Una introduccion a numerales denominados. Geometria plana. PREREQUISITO: MM 075 o su equivalente.

**MM 077—MATHEMATICS FOR NURSING AND HEALTH**

1 credit

Using proportions to convert measures in metrics and apothecary system. Calculating drug doses not available in units prescribed. Calculating drug doses of extremely small units, insulin dosages, infant and child dosage. Preparing solutions from powders and liquids.

*Offered Summer Semesters and 1st 10 weeks Fall Semesters.*

**MM 081—MATHEMATICS**

1 credit

The relationship of whole numbers to sets, numerals to numbers. Binary operations of addition, subtraction, multiplication and division. Solutions to simple linear equations. Five fundamental properties of equations. Properties of exponents. PREREQUISITE: MM 073 or its equivalent.

**MM 082—MATHEMATICS**

1 credit

The set to integers. Addition, subtraction, multiplication and division of integers. Operations with variable expressions. Introduction to solving linear equations. PREREQUISITE: MM 081.

**MM 083—MATHEMATICS**

1 credit

Rational, irrational and real numbers. Properties of fractional expressions. Multiplication and division, addition and subtraction of first degree fractional expressions. PREREQUISITE: MM 082.

**MM 084—MATEMATICAS**

1 Credito

Course contents same as MM 082. La relacion de los numeros enteros positivos & el cero con conjuntos, numerales & numeros. Operaciones binarias de suma, resta, multiplicacion & division. Soluciones de ecuaciones lineales simples. Propiedades de los numeros enteros positivos & el cero.

**MM 085—MATEMATICAS**

1 credito

Course contents same as MM 082. Suma, resta, multiplicacion & division de los numeros enteros. Simplificaciones de expresiones numerales conteniendo enteros, valores absolutos & exponentes. Simplificacion de expresiones variables. PREREQUISITO: MM 084 o su equivalente.

**MM 086—MATEMATICAS**

1 credito

Course contents same as MM 083. Propiedades & axiomas de los numeros reales. Suma, resta, multiplicacion & division de expresiones fraccionales. PREREQUISITO: MM 085 o su equivalente.



# MATHEMATICS

## MM 087—MATHEMATICS

1-3 credits

Same course content as MM 081, MM 082, MM 083, except courses are taught on a lecture basis rather than an audio-tutorial basis.

*Offered Fall & Spring Semester*

## MM 091—MATHEMATICS

1 credit

Multiplication and division of algebraic expressions. Factoring. Solving linear quadratic equations. Operations with fractional expressions. Solving fractional and absolute value equations. Solving inequalities.

## MM 092—MATHEMATICS

1 credit

Negative exponents and scientific notation. Introduction to radicals and fractional exponents. Operations with radical expressions. Using the quadratic formula and solving equations with radical expressions. PREREQUISITE: MM 091.

## MM 093—MATHEMATICS

1 credit

The concept of an ordered pair and the real number plane. Methods of graphic linear, quadratic and absolute value equations. Systems of linear equations solved analytically and graphically. Functions and relations are defined and applied. PREREQUISITE: MM 092 or its equivalent.

## MM 097—MATHEMATICS

1-3 credits

Same course content as MM 091, MM 092, and MM 093, except courses are taught on a lecture basis rather than an audio-tutorial basis.

*Offered Fall & Spring Semester*

## MM 100—MATHEMATICS

1-3 credits

There are 15 audio-tutorial mathematics classes in the MM 100 Mathematics series. They are:

MM 071	MM 081	MM 091	MM 101	MM 105
MM 072	MM 082	MM 092	MM 102	MM 106
MM 073	MM 083	MM 093	MM 103	MM 107

A complete description of these audio-tutorial mathematics courses is available in the "Student Information Booklet." Copies of this booklet are available without charge by writing to: Chairman, Mathematics Department, STCC, One Armory Square, Springfield, MA 01105.

## MM 101—MATHEMATICS

1 credit

Angles and their measure, Pythagorean Theorem, an introduction to right triangle trigonometry and vectors. PREREQUISITE: MM 093 or its equivalent.

## MM 102—MATHEMATICS

1 credit

Introduction to sets, graphs and field properties, factoring, algebraic fractions, exponents and radicals. PREREQUISITE: MM 101.

## MM 103—MATHEMATICS

1 credit

Solution sets of linear and quadratic equations, relations and functions, both linear and quadratic. PREREQUISITE: MM 102.

## MM 104—MATHEMATICS

3 credits

Same course content as MM 101, MM 102, MM 103, except courses are taught on a lecture basis rather than an audio-tutorial basis.

*Offered Fall & Spring Semester*

## MM 105—MATHEMATICS

1 credit

Properties and applications of special functions and relations, conic sections variation, inverse functions, exponential functions. PREREQUISITE: MM 103 or its equivalent.

## MM 106—MATHEMATICS

1 credit

Logarithms and interpolation, computation using logarithms, solution sets of exponential, radical and quadratic equations. PREREQUISITE: MM 105.

## MM 107—MATHEMATICS

1 credit

The Binomial Theorem, sequences and series, complex numbers, properties of logarithms, trigonometric functions and their graphs, the law of sines and law of cosines. PREREQUISITE: MM 106.



**MM 108—MATHEMATICS**

3 credits

Same course content as MM 105, MM 106, and MM 107, except courses are taught on a lecture basis rather than an audio-tutorial basis.

*Offered Spring Semester*

**MM 109—MATHEMATICS**

1 credit

Limits, basic concepts of differential calculus and applications, and basic concepts of integral calculus and applications. PREREQUISITE: MM 103 or equivalent.

**MM 120—CONTEMPORARY MATHEMATICS 1**

3 credits

Problem solving. Hand Calculators. Metric System. Percents. Ratio and Proportion. Applications of Area and Volume, Pythagorean Theorem, Taxes, Credit, Installment Buying. PREREQUISITE: MM 083.

*Offered Fall and Spring Semester*

**MM 122—FINITE MATHEMATICS 1**

3 credits

Sets, functions and relations, linear, programming, analytical geometry, matrices, simplex method and non-linear curves- PREREQUISITE: High School algebra or Math MM 093.

*Offered Fall and Spring Semester*

**MM 135—MATHEMATICS OF RADIOLOGY**

3 credits

This is a review and presentation of the math necessary for the intelligent and versatile use of x-ray equipment. It is also the basis of the math needed for nuclear medicine and radiation therapy and is also taken by these students.

**MM 137—INDEPENDENT STUDY OF MATHEMATICS**

1, 2, 3, or 4 credits

Independent study of special topics in mathematics under the direction of an instructor. PREREQUISITE: Permission of the Department Chairperson.

*Offered Fall & Spring Semester*

**MM 140—STATISTICS & QUALITY CONTROL**

4 credits

An introduction to basic statistics. Construction and use of control charts, the use of sampling plans and related topics. The organization of a quality control department is considered with emphasis on the function of its components. PREREQUISITE: Mathematics MM 107.

*Offered Fall & Spring Semester*

**MM 142—STATISTICS 1**

3 credits

Description methods of categorical and numerical data: central tendency and deviation. Probability: binomial distribution, normal distribution. Bayes theorem. Sampling. Normal Distribution of Sample Means. PREREQUISITE: Math MM 103 or Finite Math I MM 122.

*Offered Fall & Spring Semester*

**MM 143—BUSINESS STATISTICS 1**

3 credits

Descriptive methods of collecting, organizing, analyzing, interpreting, and presenting numerical data are examined. Elementary probability concepts and distributions, sample distributions, and statistical inference are emphasized. PREREQUISITE: MM 093.

*Offered Fall and Spring Semester*

**MM 150—PRE-CALCULUS 1**

4 credits

This course is designed to provide the intensive preparation necessary for students who intend to enroll in the engineering calculus sequence of courses. Topics include sets, real numbers, order, absolute value, functions, rational function, inverse functions, systems of equations, determinants, and analytic geometry of the straight line and conic sections. Three hours of lecture and one three-hour problem session. PREREQUISITES: Math MM 090 - MM 093 or its equivalent.

*Offered Fall Semester*

**MM 155—CALCULUS 1**

4 credits

The straight line; conic sections; inequalities; functions and graphs; limits and continuity; differentiation of algebraic functions; maxima/minima theory; related rates and differentials. Introduction to indefinite and definite integration of algebraic and

# MATHEMATICS

trigonometric functions, arc length, volumes by disk and shell methods, surface of revolution, moments and centroids. **PREREQUISITE:** MM 107 or its equivalent. Offered: Fall Semester days and Spring Semester evenings.

**MM 220—CONTEMPORARY MATHEMATICS 2** 3 credits  
Scientific graphs, slopes and lines. Computing and integrating probabilities. Introduction to statistical concepts. Money growth, home ownership, insurance. **PREREQUISITE:** Contemporary Mathematics 1 (MM 120).

*Offered Spring Semester of Even-Numbered Years*

**MM 222—FINITE MATHEMATICS 2** 3 credits  
Differential and integral calculus, vectors and matrices, Markov Chains. **PREREQUISITE:** Finite Math 1 MM 122.

*Offered Fall and Spring Semester*

**MM 231—ENGINEERING COMPUTATIONS** 1 credit  
The purpose of this course is to provide instruction in the use of hand-held calculators so that students are able to use the full potential of their calculators. Students will be required to solve problems designed to make full use of all the keyboard functions available. Scientific notation will be stressed whenever appropriate. Worksheets and other auto-tutorial materials will be provided to assist the student. **PREREQUISITE:** MM 081 - MM 083.

*Offered Fall & Spring Semester*

**MM 237—INDEPENDENT STUDY OF MATHEMATICS** 1, 2, 3, or 4 credits  
Continuation of MM 137. **PREREQUISITE:** MM 137 Permission of the Department Chairperson.

*Offered Fall & Spring Semester*

**MM 242—STATISTICS 2** 3 credits  
Following the pattern of MM 242, the student will continue with samples to estimate population characteristics; hypothesis testing, confidence intervals, + - distribution. Approximate tests; Chi-square distribution multinomial data. Regression and correlation. **PREREQUISITE:** MM 142, Statistics 1.

*Offered Fall Semester of Even-Numbered Years*

**MM 243—BUSINESS STATISTICS 2** 3 credits  
This course is designed so that the student gains proficiency in using statistical techniques as a decision-making tool in the major areas of business. Areas of emphasis are: statistical inference, variance, correlation and regression analysis, chi-square distribution, and non-parametric applications. **PREREQUISITE:** MM 143.

*Offered Fall and Spring Semester*

**MM 250—PRE-CALCULUS 2** 4 credits  
A continuation of Pre-Calculus 1 with an emphasis on the transcendental functions. Topics include the exponential and logarithmic functions, finite sums and series, trigonometric functions, trigonometric equations, trigonometric identities, triangle trigonometry, vectors in the plane, the algebra of complex numbers, and polar coordinates. Three hours of lecture and one three-hour problem session. **PREREQUISITE:** Pre-Calculus 1.

**MM 255—CALCULUS 2** 4 credits  
Differentiation and integration of transcendental functions; techniques of integration including trigonometric substitutions, integration by parts, methods of partial fractions and completing the square; hyperbolic functions, L'Hospital's Rule, improper integrals, infinite sequences and series, power series, Taylor series. **PREREQUISITE:** MM 155 or its equivalent.

*Offered: Spring Semester days; Summer Session evenings.*

**MM 345—STATISTICAL ANALYSIS** 4 credits  
A study of the application of computer programming to statistical procedures employed in the analysis and interpretation of categorical and numerical data. Topics include: introduction to descriptive and inferential statistics; hypothesis testing; par-

ametric and non-parametric tests such as correlation, regression, t-test, ANOVA, and factor analysis. PREREQUISITE: MK 103, MM 355.

*Offered Fall Semester*

**MM 346—STATISTICAL ANALYSIS LAB**

1 credit

This is a one semester hour computer laboratory in statistics utilizing on-campus computers and APL. PREREQUISITE: MM 255, CO-REQUISITE: MM 345.

*Offered Fall Semester*

**MM 355—CALCULUS 3**

4 credits

Topics include polar coordinates, multivariable calculus: 3-dimensional coordinate systems and surfaces from  $R_n$  to  $R_m$ ; limits and continuity; partial differentiation; chain rule; the gradient; directional derivatives; maxima and minima; multiple integration and applications; vector calculus: line integrals, surface integrals; Green's Theorem; Divergence Theorem; Stroke's Theorem. PREREQUISITE: MM 255 or its equivalent.

*Offered Fall Semester*

**MM 375—DISCRETE MATHEMATICAL STRUCTURES 1**

3 credits

Fundamentals of logic, set theory, relations, digraphs, connectivity, permutations, partially ordered sets, Boolean Algebra, proof by induction, recursion and algorithms. PREREQUISITE: MM 255.

*Offered Fall Semester*

**MM 436—ENGINEERING MATHEMATICS**

3 credits

Review of Power series solutions of ordinary differential equations; Bessel Functions; Fourier series; Strum-Liouville systems; Laplace transformations; introduction to elementary partial differential equations and applications; introduction to complex variables. CO-REQUISITE: MM 255 or its equivalent.

*Offered Spring Semester*

**MM 439—LINEAR ALGEBRA**

3 credits

Geometric vectors; vector spaces, systems of linear equations; inner product spaces; linear transformations and matrices; determinants; eigenvalues and eigenvectors Isometrics; linear and bilinear forms. CO-REQUISITE: Calculus 3 MM 355. PREREQUISITE: Calculus 2 MM 255.

*Offered Spring Semester*

**MM 440—LINEAR ALGEBRA LABORATORY**

1 credit

This is a one semester hour computer laboratory in linear algebra utilizing on-campus computers and APL. PREREQUISITE: MM 255, CO-REQUISITE: MM 439.

*Offered Fall Semester*

**MM 455—DIFFERENTIAL EQUATIONS**

4 credits

Classical methods of solution of first order and linear higher order ordinary differential equations. Laplace Transform solutions of linear ordinary differential equations. Matrix solutions to linear systems of ordinary or its equivalent.

*Offered Spring Semester*

**MM 475—DISCRETE MATHEMATICAL STRUCTURES 2**

3 credits

Trees and languages, semigroups and groups, finite-state machines, product and quotient groups, machines and regular languages, coding of binary information and error detection are topics covered in this course. PREREQUISITE: MM 375.

*Offered Spring Semester*

**MM 100—COMPUTERS AND SOCIETY**

4 credits

This interdisciplinary science-sociology, lecture and laboratory course is designed to introduce the liberal arts student to the pervasive use of computers in today's world. In the laboratory, students will have hands-on experience with personal microcomputers. They will use not only languages, but word processing, file manipulation, music synthesis, and graphics. The lectures will explore the impact computers are exerting on our social institutions; the myriad ways computers are changing the ways we work and ultimately the way we think; and projections of changes computers are expected to bring to our professional and personal life styles.



## Mechanical Technology

### **FB 110—PRODUCTION PROCESSES**

3 credits

The course is designed to provide the student with knowledge of the various manufacturing processes, castings, forgings, powder metallurgy, plastics, etc., primary working processes, metal shearing, forming, welding and allied processes are discussed. Common metal cutting and removal operations are studied, along with feeds, speeds, finishes and tolerances.

*Offered Fall Semester*

### **FB 120—ENGINEERING GRAPHICS 371**

2 credits

Basic drawing skills applied to Engineering Drawings with emphasis on blueprint reading abilities. Included are electronic and electrical drafting symbols and standards, piping drawings and standards, structural and architectural drawings and standards.

*Offered Fall Semester*

### **FB 130—BLUEPRINT READING**

2 credits

Fundamental theory and practice of blueprint reading and tolerance application.

*Offered Fall Semester*

### **FB 220—MECHANISMS**

3 credits

The material presented in this course is to acquaint the student with the functions of mechanical theory both graphically and analytically. It defines velocities and accelerations of camspots, gears, and intermittent motion.

*Offered Spring Semester*

### **FB 320—STRENGTH OF MATERIALS**

4 credits

A study of forces and force systems and their applications to materials. Stress and strain produced by the application of forces on beams, columns, trusses and riveted and welded sections are studied for simple tension and shear. Laboratory experiments provide experience in measuring and calculating stresses produced for conditions of tension, compression, shear, bending and torsion. **PREREQUISITE:** MM 101, MM 103.

*Offered Fall Semester*

### **FB 410—PRODUCTION CONTROL**

4 credits

General consideration is given to various phases and elements of production control which are later applied to continuous process companies and typical job shops. Several problem cases serve as a basis for classroom discussion. In addition to a general introduction involving various types of manufacturing plants and their respective products, the course includes a study of the elements that contribute to a successful production control program. Production forecasting, product development, control of materials, routing, scheduling, dispatching and follow-up are studied in sequence in terms of their significance and their relationship to production control. The course is based upon the idea that there is no standard production control procedure applicable to all manufacturing companies, but that there is a correct production control procedure which can be developed for any company, large or small.

*Offered Spring Semester*

### **FB 420—FLUID POWER**

4 credits

The basic theory of both hydraulics and pneumatics is developed in relation to either driving or controlling industrial machinery. Fluid power equipment is discussed from the standpoint of application. Skill is developed in layout and understanding of fluid power circuits. **PREREQUISITE:** MM 101 - MM 103.

*Offered Spring Semester*

### **FB 430—ENGINEERING ECONOMY**

3 credits

This course is designed to acquaint the student with the various alternatives in any given situation. The student will become familiar with how to evaluate alternate engineering situations. The effects of capital, how to determine which way to go, break-



even analysis, costs associated with money, equipment, depreciation and tax benefits and the various types of costs associated with business.

*Offered Spring Semester*

**FB 440—MACHINE SHOP ESTIMATING**

3 credits

The student will become familiar with the methods associated with costing out an item or assembly. He will also become familiar with not only fixed costs, but the varying costs on overhead, general and administrative and the designed profit level. Break-even costs will also be discussed and analyzed related to a business.

*Offered Spring Semester*

## Medical Assistant

**AA 100—MEDICAL ASSISTANT TECHNIQUES 1**

4 credits

Presents theory and planned student activity in assisting with physical exam, medical asepsis, selected diagnostic tests, preparing the equipment and assisting with minor surgery and wound dressing.

*Offered Fall Semester*

**AA 101—MEDICAL TERMINOLOGY**

3 credits

This course is designed to furnish the basic tools for building a medical vocabulary and to acquaint the reader with medical terms as they pertain to anatomy, physiology and disease. Emphasis will be placed on the most commonly used combinations of forms, prefixes and suffixes that make up the language of medicine. A working knowledge of medical terminology is desirable for anyone entering one of the Allied Health fields.

*Offered Fall & Spring Semester*

**AA 102—HEALTH SCIENCES AND THE LAW**

3 credits

The dynamics of Law are introduced in lecture and discussion to show the relationship between Law, medicine and the professional in the Allied Health fields. Legislation concerning health care practices will be studied. Negligence, malpractice, informed consent, patient's rights and confidentiality of patient's records are topics of concern to all health care workers. Controversial issues will be discussed.

*Offered Fall Semester*

**AA 110—HEALTH SCIENCE 1**

3 credits

This course is designed to aid the student by enhancing his/her self-understanding, helping to clarify the dynamics of the health professional-patient relationship, and developing awareness of the complementary roles of other health professionals. Concern for the psychosocial aspects of health care in such areas as communication, human sexuality, grief and loss, as well as the student developing into a member of the professional health team, will encourage acts which treat the patient as a person rather than a case and improve the self image of our graduates.

*Offered Fall Semester*

**AA 111—HUMAN SEXUALITY: YESTERDAY, TODAY AND TOMORROW**

1 credit

This course offers the opportunity for the student to acknowledge his/her feelings and thoughts, examine attitudes, beliefs, cultural patterns, and clarify his/her own value system as it relates to Human Sexuality, in an arena of nonjudgmental caring and concern.

*Offered Spring and Fall Semesters*

**AA 112—LIVING AND DYING: VALUES AND CHOICES**

1 credit

The quality of life with emphasis on the student's values and choices will be explored and shared along with the impact of *Life's Losses* including divorce, separations, death and bereavement. This seminar module will examine the power and strength of the family unit and network support during the times of crisis.

*Offered Spring and Fall Semesters*

## MEDICAL ASSISTANT

### **AA 113—INTRODUCTION TO HEALTH & HUMAN SERVICES**

1 credit

An introductory module for Allied Health students that will explore the professions through lecture and discussion on ethical conduct, communication skills, stress reduction, value clarification, holistic health and professionalism will be examined.

*Offered Spring and Fall Semesters*

### **AA 114—CARDIO-PULMONARY RESUSCITATION**

No credit

The Red Cross Modular System is organized into units so that the instructional material can be clearly followed and evaluated. It is designed to teach emergency first aid for respiratory failure and cardiac arrest victims of all ages. **PREREQUISITE:** Permission of Department Chairman.

### **AA 115—HOLISTIC HEALTH IN A HIGH-TECH ERA**

1 credit

The student will explore the art and science of interpersonal skills as they apply in the market place, in family dynamics, and in the health care system. Focus will be placed on effective communication techniques, holistic health, stress management, and values clarification.

*Offered Fall and Spring Semesters*

### **AA 116—PRINCIPLES AND PRACTICE OF PHLEBOTOMY**

1 credit

This module is designed to train and educate students in the procedure of phlebotomy/venipuncture. Incorporated into the class will be a lecture and laboratory practice sessions. **PREREQUISITES:** MB 132 and MB 232, and permission of the Department Chairperson.

### **AA 118—POSITIVE LIVING**

3 credits

This course offering will encompass positive health habits and stress reduction. Through lecture and discussion, cardio-vascular fitness, nutrition, stress and stress reduction techniques will be covered. This course will also include an aerobic exercise lab in which principles learned in class will be practiced. 2 Lectures, 2 Labs.

*Offered Spring Semester*

### **AA 119—APPLIED LEGAL CONCEPTS (MEDICAL ASSISTANT)**

1 credit

This course will emphasize the legal relationship of the physician and patient and the Medical Assistant's legal relationship in regard to the physician's legal responsibility in the practice of medicine. Upon completion of the course, the student will be able to understand the various principles of the law as they relate to the practice of medical assistant.

*Offered Fall Semester*

### **AA 200—MEDICAL ASSISTANT TECHNIQUES 2**

4 credits

This course is a continuation of advanced theory in Medical Assistant Techniques. Selected laboratory procedures will include cardio-pulmonary resuscitation, first aid, electrocardiogram, and a basic patient personal care skills component. **PREREQUISITE:** AA 100.

*Offered Spring Semester*

### **AA 201—MEDICAL TERMINOLOGY 2**

3 credits

A continuation of AA 101 Medical Terminology I. Emphasis will be placed on specific areas of medicine such as pathology, radiology, nuclear medicine, surgery etc. Discussion of the tests, procedures, and diseases that are commonly related to each area will be an integral part. **PREREQUISITE:** AA 101.

### **AA 210—HEALTH SCIENCE 2**

3 credits

Presents combined classroom theory and planned student activity in a laboratory setting to prepare the allied health student to perform the following: vital signs, medical and surgical asepsis, first-aid, including CPR, record-keeping, body mechanics and patient movement, preparation of patient for special procedures and a general understanding of medications.

*Offered Spring Semester*

### **AA 211—HEALTH SCIENCE 3**

1 credit

Presents theory and practice in classroom and laboratory setting to prepare Allied Health students for basic clinical skills and life support measures. **PREREQUISITE:** Permission of Department Chairman

**AA 303/AA 402 MEDICAL ASSISTANT TECHNIQUES 3 and 4** 8 credits

The student will average fifteen hours a week for two semesters. General introduction to hospital offices and other health care clinics provide the student with additional experience in applying cognitive learning to practical applications. Students will be assigned to several different sites to give them the best possible background from which to choose the area in which they would like to pursue their professional careers.

*Offered Fall & Spring by Arrangement*

**AA 301—INTRODUCTION TO HUMAN DISEASE** 3 credits

This course is designed to acquaint the student with the major causes of death in the United States: heart disease, cancer, and stroke. The student will become aware of genetic and environmental effects on health. In addition, he/she will learn how to promote his/her own good health and learn ways of taking charge to help prevent these major diseases from affecting self or family. Emphasis is on the relationship between daily life styles and health as a point of interest to all health-conscious people. This course is open to the entire student body.

*Offered Spring Semester*

**AA 320—PHARMACOLOGY** 3 credits

An introductory study covering pharmaceutical references and resources, trade and generic names, and a broad understanding of the effects of drugs on body systems. Classroom lectures include legal aspects of administering, dispensing, and prescribing drugs, types of drugs and drug actions, and side effects.

*Offered Fall Semester*

## Medical Laboratory Technician

**AL 100—INTRODUCTION TO THE CLINICAL LAB 1** 3 credits

The nature and scope of clinical laboratory work is explored. Proper use and care of laboratory equipment is explained. Urinalysis and principles of immunity are studied. Laboratory mathematics, preparation of laboratory solutions are taught.

*Offered Fall Semester*

**AL 200—INTRO. TO MEDICAL MICROBIOLOGY** 5 credits

The growth and identification of microorganisms, including bacterial, and fungi found in infectious diseases constitutes the basis of this course. Sensitivity testing as an aid to therapy is included.

*Offered Spring Semester*

**AL 300—HEMATOLOGY AND COAGULATION** 4 credits

The hemopoetic system, the origin and development of human blood cells, their function; normal and abnormal findings are the basis for this course. Coagulation factors and their role in health and disease are studied. **PREREQUISITE:** AL 100.

*Offered Fall Semester*

**AL 302— CLINICAL CHEMISTRY** 4 credits

Designed to acquaint the student with the principles of gravimetric, volumetric and colorimetric analyses as applied to blood and other body fluids, this course stresses manual methods. Quantitative analyses are determined spectrophotometrically. Preparation of solutions and calibration of instruments are included. **PREREQUISITE:** AL 100.

*Offered Fall Semester*

**AL 400—IMMUNOHEMATOLOGY** 3 credits

Immunohematology provides the student with a background in the principles involved in preparing blood and blood components for transfusion purposes; the ABO system and Rh factors are studied. Compatibility testing is also taught. Hemolytic disease of the newborn and the identification of antibodies are included. **PREREQUISITE:** AL 300.

*Offered Spring Semester*



## MEDICAL LABORATORY TECHNICIAN

### **AL 401—PARASITOLOGY**

2 credits

In this course the student will learn the life cycles and identification of parasites of man. Students will study prepared slides and process specimens for the detection of parasites. **PREREQUISITE:** AL 100.

*Offered Spring Semester*

### **AL 402—INTRODUCTION TO IMMUNOLOGY**

2 credits

This course will be a continuation of course AL 100 with emphasis on immunity and serological procedures.

*Offered Spring Semester.*

### **AL 403—CLINICAL LAB PRACTICUM 1**

4 credits

Supervised clinical experience is obtained in an affiliated hospital laboratory under the supervision of a qualified medical technologist and pathologist. The rotation schedule provides experience in the following departments: Blood Bank, Chemistry, Hematology, Microbiology, Serology, and Urinalysis. (Includes summer session.) **PREREQUISITES:** Successful completion of core curriculum with a minimum passing grade of "C".

*Offered Spring Semester*

### **AL 404—CLINICAL LAB PRACTICUM 2**

8 credits

Continuation of AL 403.

*Summer Session*

### **AL 405—BASIC LABORATORY PROCEDURES FOR THE MEDICAL ASSISTANT**

4 credits

This course is designed to provide the Medical Assistant with the basic clinical laboratory skills which may be required in a physician's office. Procedures for obtaining blood and urine specimens are taught. Frequently requested hematology procedures and urinalysis are included. **PREREQUISITES:** AA 100 Medical Assisting Techniques 1.

*Offered Fall Semester*

## Medical Office Administration (See Office Systems)

## Microprocessing Technology Option to Electronic Technology

### **EP 101—INTRODUCTION TO TECHNOLOGY**

1 credit

The purpose of this course is two-fold. First, the student is exposed to the world of present day technology through a survey of some of the principal areas of electronics - computers, communications, networks, etc. Then the student is introduced to the most important tool of technology—the Computer. The student studies a programming language - BASIC and utilizes the computer in the solving of problems relating to the first semester's course work. Thus, the students become conversant with the computer and aware of the various areas of study open to them.

*Offered Fall Semester*

### **EP 310—MICROCOMPUTER ARCHITECTURE AND LOGIC SYSTEMS**

3 credits

This course is a continuation of ED 240 Introduction to Computer Organization and Programming. Topics discussed provide a hardware emphasis to computer concepts related to microcomputer systems. Discussions include a review of computer systems organization and programming concepts. New topics include Boolean algebra, logic operators, and data representation. Combinational logic networks will be discussed including gates, gate technologies, reduction methods and programmable logic arrays. An introduction to sequential logic networks may also be included.

**PREREQUISITES:** Senior standing in Microprocessing Technology (in particular ED 240 Introduction to Computer Organization and Programming).

*Offered Spring Semester*

#### **EP 320—DATA COMMUNICATIONS**

3 credits

This is an introductory course in communications systems theory for students in Microprocessing Technology. The course begins with an overview of communications systems including history and the basics of digital information transfer. Early topics include noise considerations, filter systems, amplitude and frequency modulation schemes. Time and frequency domain representations are considered for AM and FM. Transmitter systems are also considered. Next pulse modulation schemes are considered and contrasted with analog modulation methods. With background material covered, topics in data communications are then discussed. These include Nyquist criteria, channel capacity (Shannon-Hartley Laws), synchronous and asynchronous transmission, baseband signal waveforms, serial and parallel data transfer, time and frequency division multiplexing, modems and terminals, networks, and error control. Other topics include wave propagation and transmission line theory, coax, twin-lead, twisted pair, fiber optics, attenuation, and pulse dispersion. **PREREQUISITES:** Senior standing in Microprocessing Technology.

*Offered Spring Semester*

#### **EP 410—MICROCOMPUTER LAB**

2 credits

This course is a continuation of ED 350 for students in Microprocessing Technology. Students will use the knowledge gained in the third semester to build, program and troubleshoot microprocessor based systems. Topics include chip interfacing, board layout and power and ground busing schemes. Microcomputer projects may include 8085, 6502, 6800 or possible 16 bit processor systems. **PREREQUISITES:** All third semester Microprocessing Technology courses.

*Offered Spring Semester*

#### **EP 420—ADVANCED MICROCOMPUTER TOPICS**

3 credits

This is a fourth semester course in the Microcomputer Technology program. The course is organized to present state of the art topics concerning microprocessor and microcomputer systems design. Topics may include design of Very Large Scale integrated systems (VLSI), packaging, microcomputer construction techniques, logic analyzers, and advanced troubleshooting techniques. **PREREQUISITES:** All third semester Microprocessing Technology courses.

*Offered Spring Semester*

#### **EP 430—MICROCOMPUTER INTERFACING**

3 credits

This is a fourth semester course in Microprocessing Technology. The course deals with the hardware necessary to build microcomputer systems from basic building block components. Both theoretical and practical aspects of interfacing processor, memory and input/output devices are discussed. Topics discussed in Data Communications and Microcomputer Architecture are now brought together in the context of chip to chip and board to board connections. Topics include grounding, shielding and system construction, interrupt handling, memory interfacing, direct memory access, bus systems, discrete interface components, serial and parallel interface and protocols (including RS-232, current loop, IEEE-488 bus, S-100 bus and others), magnetic device interface, and CRT controllers. **PREREQUISITES:** ET 330 Active Networks 2, EP 320 Data Communications, EP 310 Microcomputer Architecture and Logic Systems, ED 330 Machine and Assembly Language Programming.

*Offered Spring Semester*

## **Music**

#### **LM 130—MUSIC APPRECIATION**

3 credits

A survey course for the general student in which significant works from the several periods of music history will be heard and discussed. This course will be open to all students at the College. Outside listening and reading assignments will be scheduled and attendance at live concerts will be encouraged.

*Offered Fall & Spring Semester*

## MUSIC

### **LM 133—INTRODUCTION TO PIANO AND THEORY**

3 credits

A beginning piano course for adult students without prior musical knowledge or skills. The course will combine both music theory and a laboratory skills program with major emphasis on the basic structure of keyboard music. Melody, chords, rhythm, form, dynamics and style will be studied by the student at the keyboard and discussed in lecture sessions. Students will be encouraged to proceed as their individual abilities permit, requiring considerable individualization of instruction as they gain technical mastery. Open to all students at the College. **PREREQUISITES:** None.

*Offered Fall & Spring Semester*

### **LM 134—MUSIC FOR EARLY CHILDHOOD EDUCATION**

3 credits

An introductory course in the tenets of music, keyboard experience and practical musical activities suitable for use in nursery, kindergarten and primary programs. Also included will be workshop experiences in rhythmic movement, singing, dramatization and rhythm instruments. Restricted to Early Childhood Education majors or by special permission of the instructor.

*Offered Spring Semester*

### **LM 233—INTERMEDIATE PIANO AND THEORY**

2 credits

A continuation of the Introduction to Keyboard Skills course. Mastery of major and minor scales, arpeggios, and chords in all keys will be taught. The emphasis will be on developing mastery of sight-reading skill, providing the student with skills for further self-exploration of the keyboard upon completion of the program. Course open with the permission of the instructor or the satisfactory completion of LM 133.

*Offered Fall & Spring Semester*

## Natural Science (See Math & Natural Sciences)

## Nuclear Medicine Technology

### **AZ 102—INTRODUCTION TO NMT**

3 credits

This course serves to introduce the student in the NMT Program to the technology. The first four weeks are devoted to understanding the rationale and requirements of the program as documented in the Handbook. Covered are: competencies in radiation safety, radiation accident prevention, emergency protocols, clinical protocols, darkroom procedures, survey and wipe techniques. The remainder of the course covers in detail the regulatory aspect of radioactive materials, an overview of the NMT Program with the Essentials, imaging procedures as an observer, the NMT laboratory, packaging, record keeping, and radioactive disposal. **RESTRICTED** to AZ. **PREREQUISITES:** concurrent MP 146, MB 132.

*Offered Fall Semester*

### **AZ 204—STATISTICS AND INSTRUMENTATION**

3 credits

The mathematics and rationale underlying the Poisson and Gaussian statistics is explained from basic terminology to linear regression. Basic electronics is covered enough to explain performance characteristics of collimators and phantoms. Quality assurance parameters of the dose calibrator, survey meters, scintillation tubes, and output instrumentation is covered. **RESTRICTED** to AZ. **PREREQUISITES:** AZ 102, MP 146, MB 132, MM 093.

*Offered Spring Semester*

### **AZ 302—NUCLEAR IMAGING OF ORGANS**

3 credits

This course is outlined according to the organ/system approach and covers imaging of: endocrine, central nervous, respiratory G.I., hepatic, hepatobiliary, genitourinary and skeletal systems. Inflammatory process, tumor and pediatric imaging are discussed. The coverage of each topic will include in detail a discussion of radiophar-



maceuticals, imaging techniques, indications and interpretative guidelines. RESTRICTED to AZ. PREREQUISITES: AZ 102, MB 232, concurrent MP 300.

*Offered Fall Semester*

**AZ 305—COMPUTER SCIENCE FOR NUCLEAR MEDICINE TECHNOLOGY** 1 credit

The basic language is introduced with special calls to Nuclear Medical curves and patient data for analysis. One hour lecture; one hour laboratory. RESTRICTED to AZ. PREREQUISITES: AZ 204, concurrent AZ 301, AZ 302.

*Offered Fall Semester*

**AZ 414—IN VITRO AND NON-IMAGING STUDIES**

3 credits

Various gastrointestinal studies are covered including the Schillings test. Hematologic and dilution procedures of the red cells and ferrokinetics are presented. Radioassay discusses the theory of immunology and radioassay and enzyme studies. Liquid scintillation instrumentation is covered. RESTRICTED to AZ. PREREQUISITES: AZ 204, AZ 302. concurrent MP 400.

*Offered Spring Semester*

**AZ 411—NUCLEAR CARDIOLOGY AND OTHER ORGAN ANALYSIS**

1 credit

Cardiac physiology and pathology are discussed in detail. Patient preparation, Radiopharmaceuticals, instrumentation, and data acquisition are studied. Competency examinations required for completion of course.

Computer analysis of data both qualitative and quantitative for specific cardiac function and measurement are presented. Phase analysis and dual nuclide imaging, and applications are covered. RESTRICTED to AZ. PREREQUISITES: AZ 204, AZ 302, AA 210, concurrent AZ 404.

*Offered Spring Semester*

## PRACTICUM EXPERIENCE

Practicum includes the clinical experiences unifying the theory taught in the Nuclear Medicine Technology and support courses. The sequencing of the practicum and competency examinations in specific task areas places gradual expectations on the level of the student so that after over 1900 accumulated clinical hours in twenty-four months, the student can be graduated as a competent NMT, board eligible. With four clinical sites in eight rotations, the student attends each site twice. At the beginning of the rotation, the student must pass a competency tailored to that site: checklist protocol, survey, wipe, darkroom, and disposal rules. The individual competencies are listed in the Handbook; students follow a code of deportment and dress at the clinical site. Each course requires all of the following: attendance, competency examinations, evaluations, and advisory meetings.

**AZ 103—PRACTICUM 1**

2 credits

Introduction to NMT in October. Before attendance to clinical site, student must pass campus competency. Biweekly evaluations. TWO FULL DAYS PER WEEK. Clinical hours = 132. RESTRICTED TO AZ. PREREQUISITES: Concurrent MP 146, MB 132, AZ 102.

*Offered Fall Semester*

**AZ 207—PRACTICUM 2**

2 credits

Continuation of freshman orientation with additional on site competencies. Biweekly evaluation. Clinical hours = 180. TWO FULL DAYS PER WEEK. RESTRICTED to AZ. PREREQUISITES: AZ 103, MB 132, MP 146, AZ 102, concurrent MB 232 and AZ 204.

*Offered Spring Semester*

**AZ 209—PRACTICUM - SUMMER - 1**

5 credits

Student expected to perform eight-hour days, five days per week for fifteen weeks. One-to-one supervision with supervising technologist. Weekly evaluations. Competencies. Clinical hours = 480. RESTRICTED to AZ. PREREQUISITES: AZ 207, AZ 204.

*Offered Summer Semester*

## NUCLEAR MEDICINE TECHNOLOGY

### **AZ 301—PRACTICUM 3**

5 credits

Three full days per week. Weekly evaluations. Competencies. Clinical Hours = 300. RESTRICTED to AZ. PREREQUISITES: AZ 205, AZ 206, AZ 208.

*Offered Fall Semester*

### **AZ 401—PRACTICUM 4**

5 credits

Three full days per week. Weekly evaluations. Competencies. Clinical hours = 300. RESTRICTED to AZ. PREREQUISITES: AZ 301, concurrent AZ 404.

*Offered Spring Semester*

### **AZ 410—PRACTICUM - SUMMER - 2**

5 credits

Eight hour day for 13 weeks. Weekly evaluations. Competencies. Supervision one-to-one on elution of generator, injection of radio-pharmaceuticals, assistance in record keeping, and waste disposal procedures. Hours = 520. RESTRICTED to AZ. PREREQUISITES: AZ 401, AZ 404.

*Offered Summer Semester*

### **AZ 407—RADIOASSAY LABORATORY PRACTICUM**

2 credits

For two weeks, the student will be assigned to a medical laboratory to implement the procedures studied in AZ 404. The tests will include, but not be limited to RIA, T3, T4, and FOLATE. Examination on each performed test. Clinical hours = 80. RESTRICTED to AZ. PREREQUISITES: AZ 404, AZ 401.

*Offered Summer Semester*

## Nursing

### **AN 100—NURSING 1**

7 credits

Nursing 1 is an introduction to contemporary nursing. The conceptual framework utilized is the pursuit of wholeness through the nursing process. Using principles drawn from the behavioral and biological sciences, the student is guided in developing the ability to use this systematic method for assessment of needs, identification of problems, setting of goals and objectives, implementing and evaluating nursing care. The modular approach is used to help the student gain knowledge and understanding of the life cycle, the nursing process, nursing issues, health needs, basic nutrition and pharmacology. Integrated with the theoretical content is planned simulated laboratory practice and experience in health facilities which permit the opportunity to apply scientific principles and develop skill in meeting patient needs. In order to develop the student's ability to compute medication dosage, completion of Math Module (MM 077) is required by the 12th week.

*Offered Fall Semester*

### **AN 200—NURSING 2**

7 credits

With the knowledge of basic concepts and skills in nursing derived from Nursing 1, the student is provided with opportunities to develop the nursing process. Under supervision, he/she implements and evaluates nursing care to children and adults. Community health facilities are utilized to give the student the opportunity to plan and deliver care to persons of various life styles and economic standards, who are experiencing various degrees of homeostatic imbalance.

*Offered Spring Semester*

### **AN 300—NURSING 3**

9 credits

A continuation of Nursing 2, in which the student is more independent in using the nursing process to coordinate care for persons with more complex health problems.

*Offered Fall Semester*

### **AN 400—NURSING 4**

9 credits

#### **NURSING THE CHILDBEARING FAMILY**

4.5 credits

Nursing the Childbearing Family is concerned with the maternity cycle and with the people involved in the family unit, from conception through the neonatal period. The developmental approach is used to assist the student to assimilate knowledge and understanding of the family as it deals with maintaining health and as it copes with the stresses of pregnancy, childbirth, and integration of the newborn into the family.

The student nurse will develop skill in using the nursing process to meet the needs of the childbearing family in a variety of settings.

*Offered Spring Semester*

#### **COMMUNITY MENTAL HEALTH NURSING**

4.5 credits

Through the exposure to Community Mental Health Agencies, the student of nursing will be offered opportunities to develop psychiatric nursing skills practiced in previous nursing courses. Interpersonal skills will be refined through relationships with patients, health teammembers and in group process. Community resources will be selected in order to expose the student to leaders in community mental health and media which will broaden their field of knowledge in the discipline.

*Offered Spring Semester*

#### **AN 401—NURSING 5**

2 credits

Nursing process is utilized in assisting students to identify their needs and problems in the transition role from student to graduate. This course is designed to help prepare the graduate for professional nursing responsibilities. Discussion topics include basic legal concepts, current issues in nursing, nursing leadership within an organization and role of the nurse within the nursing profession.

*Offered Spring Semester*

## **Office Systems/Secretarial Sciences**

#### **BC 102—MACHINE SHORTHAND 1**

6 credits

This course will enable the student to gain a mastery of the basic machine shorthand theory. Emphasis will be placed on stroking technique and vocabulary development through the reading and writing of shorthand. Machine shorthand tapes correlated with the textbook are used in the development of dictation speed and the reading of notes accurately. This course meets 8 hours per week. A grade of "C" or better is required.

*Offered Fall Semester*

#### **BC 202—MACHINE SHORTHAND 2**

6 credits

This course will enable the student to gain a mastery of advanced machine shorthand theory and to develop shorthand and transcription skill on unfamiliar material. The student will develop the ability to separate phonetically unfamiliar words according to machine shorthand theory and to write these words accurately in shorthand. Students will transcribe unfamiliar material with 95 percent accuracy. The course meets 8 hours per week. A grade of "C" or better is required. PREREQUISITE: BZ 101, BC 102 or permission of instructor.

*Offered Spring Semester*

#### **BC 302—MACHINE SHORTHAND 3**

6 credits

This course continues the presentation of advanced shorthand theory, emphasizes speed building and reviews grammar and punctuation appropriate to legal transcripts. Students will be tested weekly on literary material, jury charge, and question and answer testimony, each of which must be passed with 95 percent accuracy. The course meets 8 hours per week. A grade of "C" or better is required. PREREQUISITE: BZ 201, BC 202, or permission of the instructor.

*Offered Fall Semester*

#### **BC 402—MACHINE SHORTHAND 4**

6 credits

This course is a continuation of BC 302 emphasizing speed and accuracy. Students will be required to transcribe verbatim with a minimum of 95 percent accuracy advance dictation of jury charges, literary selections, and multi-voice question and answer testimony. Students will be trained under simulated conditions in preparation for the Massachusetts Certified Shorthand Reporter's Examination. Included are a review of medical terminology, specialized material in the areas of legal, technical and medical dictation, and sustained dictation. The course meets 8 hours per week. A grade of "C" or better is required. PREREQUISITES: BL 303, BL 301, BC 302 or permission of instructor.

*Offered Spring Semester*



## OFFICE SYSTEMS

### **BC 403—MEDICAL DICTATION FOR COURT REPORTERS**

1 credit

This course will consist of medical dictation emphasizing question and answer material at speeds ranging from 150 to 225 wpm. This material is generally drawn from actual cases. A grade of "C" or better is required.

*Offered Spring Semester*

### **BC 412—COURT REPORTING TECHNOLOGY**

3 credits

This course is designed to familiarize students with the Massachusetts court system, transcript format for district and superior courts, as well as reporting techniques using machine shorthand. The student will attend actual court cases, approved by the instructor, and prepare transcripts of those cases. A grade of "C" or better is required. **PREREQUISITE:** BL 301, BC 302, or permission of instructor.

*Offered Spring Semester*

### **BC 502—MACHINE SHORTHAND 5/ADVANCED COURT REPORTING TECHNOLOGY**

9 credits

This course is restricted to fifth-semester Court Reporting majors who have not completed the requirements of Machine Shorthand 4 and/or Court Reporting Technology. The student works independently with speed tapes and is tested regularly at CSR and RPR levels. He/she affiliates with a local reporting firm and/or with an official reporter, spending 15 hours per week attending actual cases and transcribing. Grades are based on high-speed dictations and recommendations of the co-operating firm. A seminar is held weekly. A grade of "C" or better is required.

*Offered Fall Semester*

### **BE 301—EXECUTIVE TYPEWRITING**

3 credits

This course is designed for the Executive Office Administration major. Difficult materials in manuscripts, statistical, letter, and rough draft typing present a challenge in problem solving for the student. Speed and accuracy are developed through daily production of these materials, and typing stamina is further built and maintained by the use of 40-minute production tests. The course meets 5 hours per week. A grade of "C" or better is required. **PREREQUISITE:** BZ 201 a minimum speed of 40 words per minute for 5 minutes.

**NOTE:** No credit is given unless minimum mailability standards are achieved.

*Offered Fall Semester*

### **BE 303—EXECUTIVE OFFICE PRACTICE**

2 credits

This course gives the student instruction and practice in a variety of office skills, including the duties of the receptionist, telephone techniques, handling confidential matters, conferences and itineraries. Through the use of simulated office situations, the student develops initiative and decision-making abilities essential to top-level office administration positions. The course meets 2 hours per week. A grade of "C" or better is required. **PREREQUISITE:** BZ 201.

**NOTE:** No credit is given unless minimum mailability standards are achieved.

*Offered Fall Semester*

### **BE 402—EXECUTIVE/TECHNICAL DICTATION & TRANSCRIPTION**

6 credits

This course is designed to develop the student's ability to take dictation at high rates of speed and to transcribe rapidly and accurately. Shorthand theory, punctuation, spelling and vocabulary are stressed throughout the course. The course meets 8 hours per week. A grade of "C" or better is required. **PREREQUISITES:** BZ 302 and BE 301.

**NOTE:** No credit is given unless minimum mailability standards are achieved.

*Offered Spring Semester*

### **BL 301—LEGAL TYPEWRITING**

3 credits

This course is designed specifically for the Legal Office Administration major. Stress is placed on building speed and accuracy in the production of legal documents and correspondence. Legal vocabulary and punctuation are emphasized through project work. **PREREQUISITE:** BZ 201; typing speed of 40 words per minute for 5 minutes. This course meets 5 hours per week. A grade of "C" or better is required.

The minimum requirement for this course is 50 wpm with 5 or fewer errors.

*Offered Fall Semester*

### **BL 302—LEGAL SHORTHAND TERMINOLOGY**

1 credit

This course is designed to give the student a background in basic legal terminology. The student who successfully completes this course will be able to correctly spell, pronounce, and define the legal terms presented as well as transcribe them at the typewriter either directly from taped dictation or from shorthand notes. Students who plan to work in a legal office as a receptionist/typist, secretary, stenographer, word processor, or research assistant, or in a court-related job such as court reporter, note-reader transcriber, or transcriptionist will benefit from the course. This course meets one class period per week. A grade of "C" or better is required. **PREREQUISITES:** BC 202 or BZ 202, BZ 201.

*Offered Fall Semester*

### **BL 303—LEGAL OFFICE PRACTICE**

2 credits

This course is designed to acquaint the student with the Massachusetts court system, including practices and procedures in the preparation of legal papers and documents. Legal terminology and procedures in the areas of criminal, civil, probate, domestic relations, etc., will be presented. Field trips will be arranged, as well as speakers from the courts and legal offices in the Greater Springfield area. The course meets 2 hours per week. A grade of "C" or better is required. **PREREQUISITE:** BZ 202 or BC 202, BZ 201.

**NOTE:** No credit is given unless minimum mailability standards are achieved.

*Offered Fall Semester*

### **BL 402—LEGAL DICTATION & TRANSCRIPTION**

6 credits

This course is designed to develop the student's ability to take dictation of legal material and to transcribe with speed and accuracy. Legal terminology, grammar, spelling, punctuation, capitalization, proofreading, and the use of reference material will be stressed. The Mass. Rules of Court will be followed. This course meets 8 hours per week in a designated information processing center. A grade of "C" or better is required. **PREREQUISITE:** BZ 302 or BC 302, BL 301, BL 302, BZ 305.

**NOTE:** No credit is given unless minimum mailability standards are achieved.

*Offered Spring Semester*

### **BM 301—MEDICAL TYPEWRITING**

3 credits

This course is designed specifically for the Medical Office Administration major. This production typing course concentrates on understanding and accuracy in typing medical forms, reports, progress notes, case histories, and correspondence. Typing stamina is built and maintained through 5-minute timed writings using medical material. The minimum requirement for this course is 50 words per minute for 5 minutes with 5 or fewer errors from unpracticed medical material. This course meets 5 hours per week. **PREREQUISITE:** BZ 201 (Typing 2 or equivalent) and minimum speed of 40 wpm for 5 minutes.

**NOTE:** No credit is given unless minimum mailability standards are achieved.

*Offered Fall Semester*

### **BM 303—MEDICAL OFFICE PRACTICE**

2 credits

This course is designed to familiarize the student with the routine business skills pertinent to the medical office. This course includes the development of reception room procedures, telephone techniques, and various other medical office assistant duties. The course meets 2 hours per week. **PREREQUISITE:** BZ 101.

**NOTE:** No credit is given unless minimum mailability standards are achieved.

*Offered Spring Semester*

### **BM 454—MEDICAL MACHINE TRANSCRIPTION**

3 credits

This course is an introduction to basic machine transcription techniques with emphasis on spelling, grammar, punctuation, number usage, and capitalization of medical material. Vocabulary relating to a variety of medical specialties will be introduced. Emphasis is on mailable transcripts of medical forms; History, Operative Report, X-Ray, Consultant's Report, and Autopsy Report. The relationship of ma-



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chine transcription to the word-processing concept will also be introduced. This class will meet in a designated information processing center. The course meets 3 hours per week. **PREREQUISITES:** BM 301 (Medical Typewriting), BM 303 (Medical Office Practice), BZ 305 (Word Proc. Tech 1), and typing speed of 50 wpm.

**NOTE:** No credit is given unless minimum mailability standards are achieved.

*Offered Spring Semester*

### **BO 103—OFFICE ASSISTANT PROCEDURES**

2 credits

The job of the Office Assistant includes many tasks such as typing, filing, record-keeping, operating office machines, performing receptionist duties, and doing general office work. The job title assigned to this type of work may be office assistant, general office clerk, office clerk, secretarial assistant, clerical assistant, typist, clerk-typist, records clerk, or office machine operator. This course prepares students for the varied and interesting work found in the modern office. It provides students with the opportunity to acquire the knowledge and skills needed to perform these important duties in a field of work that continues to grow.

*Offered Fall Semester*

### **BO 204—INTRO. TO MACHINE TRANSCRIPTION**

3 credits

This course is an introduction to basic transcription techniques with emphasis on spelling, grammar, punctuation, number usage, and capitalization. Vocational competence in machine transcription for the clerical office worker is the principal goal of introduction to Machine Transcription. Developing good listening techniques, producing first-time mailable business communications, and learning the importance of machine dictation and transcription in the word processing cycle are the important objectives in this course. **PREREQUISITES:** BZ 101, BZ 105.

*Offered Spring Semester*

### **BP 415—WORD PROCESSING PRACTICUM**

4 credits

This course is designed to familiarize the student with actual management procedures in an information processing environment. Students will be scheduled to practical observation and experience in an area company approved by the Department Chairperson. This practicum will average six to eight hours per week. A grade of "C" or better is required. **PREREQUISITES:** BK 110, BZ 305, BZ 205 and permission of departmental chairperson.

*Offered Fall and Spring Semester*

### **BZ 100—KEYBOARDING SKILLS**

1 credit

This course is designed for any individual wishing to develop touch keyboarding skills applicable to today's sophisticated typewriter and computer keyboards. A minimum touch keyboarding speed of 15 wpm is required for course completion. Available to the entire STCC community. **PREREQUISITE:** NONE.

*Offered Fall and Spring Semester*

### **BZ 101—TYPEWRITING 1**

3 credits

A foundation course in which current typewriting techniques, skill and accuracy are stressed. Time writings for 3 minutes are introduced. The student becomes familiar with centering, manuscripts, tabulations and block letter style. Class drills and projects aid in individual progress. The minimum speed requirement for the course is 30 words per minute for 3 minutes with 3 or less errors for beginners. Course meets 5 hours per week. A grade of "C" or better is required.

*Offered Fall & Spring Semester*

### **BZ 102—SHORTHAND FOR THE ELECTRONIC OFFICE I**

4 credits

This course introduces Gregg Shorthand, Series 90, for the information processing era. Emphasis is placed on mastery of basic principles with particular attention to penmanship, vocabulary, spelling, punctuation, English grammar, and transcription. The course stresses the use of shorthand as a recognized business and industry indicator for predicting promotability and productivity in the electronic office. The minimum speed requirement for the course is 40 words per minute for 2 minutes on familiar material with 95% accuracy. The course meets 5 hours per week. A grade of "C" or better is required.

*Offered Fall Semester*



**BZ 103—PERSONAL USE WORD PROCESSING**

1 credit

This course is designed to acquaint individuals with basic word processing capabilities. Hands-on instruction in basic text and equipment manipulation will be presented. Basic concepts of information processing will also be covered. Available to the entire STCC community. **PREREQUISITE:** BZ 100, BZ 101, or permission.

*Offered Fall and Spring Semester***BZ 105—WORD PROCESSING EDITING**

3 credits

Word Processing Editing is a one-semester course which will prepare the student for production of mailable business communications in machine transcription and word processing courses. The course emphasizes the basic principles of typewriting style and word division, punctuation style, spelling improvement, capitalization, number, and abbreviation styles, proofreading, and editing. Achievement tests will be administered upon completion of each area of emphasis.

*Offered Fall & Spring Semester***BZ 111—AVT TYPING I**

3 credits

This course is held in the Office Systems Learning Center using AVT (Audio/Visual Training) materials for individualized instruction. It is designed for students who have previous knowledge and experience with the keyboard. The course is designed to permit individual pacing with frequent follow-up sessions with faculty. Emphasis is placed on developing correct typewriting techniques, skill, and accuracy. The student is responsible for completing all skill building and production work assigned. The minimum speed requirement for the course is 30 words per minute for three minutes with three or less errors. The course meets three scheduled hours per week with two additional open lab hours. **PREREQUISITE:** Touch keyboarding skill.

*Offered Fall and Spring Semesters***BZ 112—SHORTHAND SKILL BUILDING**

4 credits

This course is designed for the student who has had some experience with shorthand but does not feel secure enough to proceed with Shorthand 2. The course will include a thorough review of College Gregg Shorthand principles. Emphasis will be placed on the development of speed and accuracy in taking dictation in conjunction with spelling, punctuation and vocabulary. The minimum requirement for the course will be 70 words per minute for two minutes with 95 percent accuracy. The course meets 5 hours per week. A grade of "C" or better is required.

*Offered Periodically***BZ 113—RECORDS MANAGEMENT**

1 credit

In this course the student learns the office procedures involved in records management and in the alphabetic filing arrangement of personal names and the names of businesses, institutions, and government agencies. Subject numeric, and geographic filing are also presented.

*Offered Fall & Spring Semester***BZ 115—STENOSCRIPT 1**

3 credits

Stenoscrypt is an alphabetic system of shorthand that can be learned in one semester. Students will develop a marketable shorthand skill of up to 90 words a minute that will make them more employable and help them earn better salaries. Brief alphabetic forms, abbreviations, business vocabulary, punctuation rules, speed building drills, and a 6,000-word business dictionary are presented. This course is designed for any student seeking stenoscrypt abilities; however, students wishing a degree in Executive Office Administration **with shorthand** should enroll in **BZ 102—SHORTHAND I**.

**BZ 200—KEYBOARD SKILL BUILDING**

1 credit

This course is designed to assist individuals in building keyboard speed. Individual speed building goals will be determined with a minimum goal of a 10 wpm gain. Available to the entire STCC community. **PREREQUISITE:** BZ 100, BZ 101, or BZ 111.

*Offered Fall and Spring Semesters*

## **BZ 201—TYPEWRITING 2**

3 credits

This course is a continuation of BZ 101 or its equivalent with continued development of speed and accuracy together with a thorough mastery of all letter styles, inter-office correspondence, addressing envelopes, rough draft materials and tabulation. The minimum requirement for this course is 40 words per minute for 5 minutes with 5 or less errors. The course meets 5 hours per week. A grade of "C" or better is required. **PREREQUISITE:** BZ 101 or equivalent.

*Offered Fall & Spring Semester*

## **BZ 202—SHORTHAND FOR THE ELECTRONIC OFFICE 2**

4 credits

This course continues the refinement of the principles of Gregg Shorthand, Series 90, for the information processing era with further emphasis on basic principles, penmanship, vocabulary, spelling, punctuation, English grammar, and transcription. Since over two-thirds of today's business executives specify secretaries with shorthand, emphasis is placed on the development of speed and accuracy in taking dictation. The minimum requirement for the course is 60 words per minute for 3 minutes on new material with 95% accuracy. The course meets 5 hours per week. A grade of "C" or better is required. **PREREQUISITE:** BZ 102 or BZ 112, BZ 101.

*Offered Spring Semester*

## **BZ 205—WORD PROCESSING CONCEPTS**

1 credit

This lecture course introduces the total concept of word/information processing. It serves as an overview for college students who are interested in learning how to adapt technically advanced office equipment to process words. The course introduces the concept and role of word processing in office automation; explains the rapidly expanding technology and terminology and those career opportunities it offers; and uncovers the mysteries of modern office technology and its effect upon office work and those who perform it. This course meets once a week, and should be taken prior to or concurrently with BZ 305 or with permission of instructor.

*Offered Fall & Spring Semester*

## **BZ 211—AVT TYPING 2**

3 credits

This course is a continuation of BZ 111. Emphasis is on continued development of speed and accuracy, and a thorough mastery of production assignments. The minimum speed requirement for this course is 40 wpm for five minutes with five errors or less. This course meets three scheduled hours per week with two additional open lab hours. A grade of "C" or better is required. **PREREQUISITE:** BZ 111 or BZ 101.

*Offered Fall and Spring Semester*

## **BZ 240—BUSINESS CALCULATING MACHINES**

1 credit

This course gives the student instruction and practice on the ten-key keyboard calculator commonly found in business offices. The application of basic mathematical principles in solving business problems is stressed. This course meets 1 hour per week.

*Offered Fall & Spring Semester*

## **BZ 251—MEDICAL TYPEWRITING**

2 credits

This course is designed specifically for the Medical Assistant. Emphasis is placed on the understanding and production of medical forms, insurance forms, case histories, discharge summaries, medical reports, and medical correspondence. Typing stamina is built and maintained through 5-minute timed writings using medical material. **PREREQUISITE:** BZ 101 (Typing 1 or equivalent).

*Offered Fall Semester*

## **BZ 454—MEDICAL MACHINE TRANSCRIPTION**

3 credits

This course is designed to introduce the Medical Assistant to machine transcription. Stress will be placed on skill development and production of accurate medical reports. The relationship of machine transcription to the word-processing concept will also be introduced. This course meets 3 hours per week. **PREREQUISITE:** BZ 101 (Typing 1 or equivalent) and BZ 251 (Medical Typewriting).

*Offered Spring Semester*



**BZ 302—SHORTHAND SPEED BUILDING**

1 credit

This course stresses the development of speed with continued emphasis on basic principles and transcription for mailability in the electronic office. The minimum requirement for the course is 80 words per minute for 5 minutes with 95% accuracy. The course meets 2 class meetings per week. A grade of "C" or better is required. PREREQUISITE: BZ 202 or BZ 211, 201.

*Offered Fall Semester***BZ 304—MACHINE TRANSCRIPTION**

3 credits

This course emphasizes the techniques and operation of machine transcription equipment. Transcription skills will be acquired through the use of a wide variety of business related dictation. Grammar, spelling, punctuation, capitalization, proof-reading, and the use of reference material will be stressed. The relationship of machine transcription to the word-processing concept will also be introduced. The course meets three hours per week. PREREQUISITE: BZ 202 or BC 201, 40 WPM typing speed.

NOTE: No credit is given unless minimum mailability standards are achieved.

*Offered Fall & Spring Semester***BZ 305—WORD PROCESSING TECHNOLOGY 1**

3 credits

This course is designed to familiarize the student with word processing equipment and applications. Emphasis is placed on developing skills and knowledge in processing business documents on an integrated information system. Students will format, store, retrieve, edit, merge, etc., typical word processing assignments through keyboarding on video display terminals. Processed text will be printed on high-speed printers for submission to instructors. This course meets for a one-hour lecture and three laboratory hours. A grade of "C" or better is required. PREREQUISITES: BZ 101, BZ 201 or permission of department chairperson.

NOTE: No credit is given unless minimum mailability standards are achieved.

*Offered Fall & Spring Semester***BZ 405—INFORMATION PROCESSING OFFICE MANAGEMENT**

3 credits

This course exposes the student to typical responsibilities encountered in managing an information processing center. It will include measuring productivity techniques, employee-training techniques, motivation of personnel, design of forms, controlling distributions of work, investigation of different types of hardware, centralized and decentralized services, and planning the office. Meets 3 hours per week. A grade of "C" or better is required of Word Processing Management majors. PREREQUISITE: BZ 205 or permission of instructor.

*Offered Spring Semester***BZ 415—WORD PROCESSING TECHNOLOGY 2**

3 credits

This course is designed to familiarize the student with word processing capabilities on microcomputers and/or stand-alone word processing equipment. Emphasis is placed on using basic to advanced functions in processing business documents. The student will have an understanding of software for computers and how data processing integrates with word processing. Meets for a one-hour lecture and three laboratory hours. BZ 101, BZ 201, or permission of department chairperson.

NOTE: No credit is given unless minimum mailability standards are achieved.

*Offered Fall & Spring Semesters***BZ 416—ADVANCED WORD PROCESSING APPLICATIONS**

3 credits

This course places emphasis on advanced applications on the Wang Integrated Information computer system. Management students will develop skills and knowledge in processing complex business documents and procedures; glossary development; advanced data sort/merge applications; utility functions; multiple filing; and other sophisticated applications. This course will also explore women in management issues and integrate management styles and techniques with the integrated information processing environment. PREREQUISITES: B or better in BZ 305 (WP Tech 1) and permission of department chairman.

*Offered Fall and Spring Semesters*



## Philosophy

### **LX 110—PHILOSOPHY 1**

Philosophy is part of the study of the self; the search for reasons for our values and beliefs; and for good reasons for our reasons. The course includes a critical examination of the traditional questions in ethics, politics, religion and art. No prerequisites.

### **LX 210—PHILOSOPHY 2**

3 credits

This course will examine in greater detail some of the classical problems along with some contemporary problems introduced in Philosophy 1.

Students will be required to write one critical essay and one annotated bibliography on assigned readings.

This course will feature guest lectures by members of other departments of STCC and outside participants.

## Physical Therapist Assistant

### **AP 100—PHYSICAL THERAPIST ASSISTANT 1**

4 credits

This course provides a survey of Physical Therapy and its relation to the medical environment. Emphasis is placed on the relationship of the assistant to the registered professional Physical Therapist. Body mechanics, selected basic nursing skills, and first aid are included. Field trips for orientation and observation will be planned.

*Offered Fall Semester*

### **AP 200—KINESIOLOGY**

4 credits

This course is designed to develop an understanding of the dynamics of human motion through the study of muscles and joints. **PREREQUISITE:** Anatomy & Physiology 1 (MB 132).

*Offered Spring Semester*

### **AP 201—PHYSICAL THERAPIST ASSISTANT 2**

4 credits

This course provides lecture and laboratory work in hydrotherapy, electrotherapy, massage and the study of their physiological effects. Principles of bronchial drainage are included. **PREREQUISITE:** Physical Therapist Assisting 1.

*Offered Spring Semester*

### **AP 300—MEDICAL LECTURES**

3 credits

This course presents the tissue changes resulting from trauma, disease, tumors, and degenerative processes. A series of lectures acquaint the student with the orthopedic, neurological, and general medical conditions he/she will encounter in treating the patient. **PREREQUISITES:** Anatomy & Physiology 1 and 2 (MB 132, MB 232).

*Offered Fall Semester*

### **AP 301—PHYSICAL THERAPIST ASSISTANT 3**

4 credits

The student studies mechanical and physiological concepts of exercise programs with emphasis on the problems related to the patient's motor involvement. Laboratory experience is provided to develop the skill of the student in application of various assistive devices. **PREREQUISITE:** Kinesiology (AP 200) Physical Therapist Assistant Techniques 1 & 2 (AP 100, AP 201).

*Offered Fall Semester*

### **AP 302—MUSCLE TESTING**

1 credit

This is an introductory course in the manual testing of the gross strength of human muscle groups. **PREREQUISITE:** AP 200 Kinesiology.

*Offered Fall Semester*

**AP 403, AP 404—SUPERVISED CLINICAL EXPERIENCE**

6 credits each

Supervised practice in selected clinical settings. PREREQUISITES: Physical Therapist Assistant Techniques 1, 2, & 3 (AP 100, AP 201, AP 301); Kinesiology, AP 200; Medical Lectures, AP 300.

*Offered Spring Semester***AP 402—PHYSICAL THERAPIST ASSISTANT SEMINAR**

1 credit

The purpose of these seminars is to correlate the academic and technical courses with the practical clinical work. They are alternately scheduled with the affiliation assignments so that students may return to the classroom for sharing and discussion.

*Offered Spring Semester*

## Physics

**MP 090—BASIC SCIENCE**

4 credits

Introduction to physical science, using very frequent experiments and simple arithmetic. Emphasis on development of the student's confidence, initiative, and self-reliance. Includes volume by water displacement; weight changes in reactions; freezing and boiling points; densities of solids, liquids and gases; solubilities; identification of gases. Constant proportions from electrolysis of water and from synthesis of a salt. Atoms and molecules; spectra; radioactivity. PREREQUISITE: None. The course serves as preparation for other college science courses and is suitable for students who have taken no previous science.

*Offered Fall & Spring Semester***MP 119—TECHNICAL PHYSICS**

4 credits

An overview of physics in one semester, intended primarily for students in Technology programs. Mechanics topics include vectors, statistics, linear and circular motion, work and energy. Electric fields and circuits, waves, and light are also treated. Experimentation and problem-solving are stressed. PREREQUISITE: MM 101 (Trigonometry).

*Offered Fall & Spring Semester***MP 120—TECHNICAL PHYSICS FOR ELECTRONICS**

4 credits

A course on mechanics, energy, electricity, magnetism and light. Lectures, demonstrations, problem assignments and laboratory work carried on in the areas of; motion, energy conservation, electromagnetic induction, EM radiation and optics. Three hour laboratory. PREREQUISITE: MM 101 (Trigonometry).

*Offered Spring Semester***MP 130—COLLEGE PHYSICS 1**

4 credits

A non-calculus, college level physics course for liberal arts transfer students or students of the life sciences. Topics include motion, mass, force, conservation laws, momentum, gravitation, work, energy, and heat. The problems and laboratory are designed with biological applications. There is a three hour laboratory per week. PREREQUISITE: MM 093 (Algebra).

*Offered Fall Semester***MP 230—COLLEGE PHYSICS 2**

4 credits

A non-calculus, college level physics course for liberal arts transfer students or students in the area of pre-med., pre-dental, pre-vet., or the life sciences. Topics include electrostatics, basic electronics, solid state, circuit analysis, alternating current, optics, construction of the nucleus, radioactivity, and Bohr model. Three hour laboratory. PREREQUISITE: MM 093 (Algebra).

*Offered Spring Semester***MP 132—UNIVERSITY PHYSICS 1**

5 credits

Rigorous introductory course covering mechanics, statics, conservation of energy and momentum, conservation of angular momentum, heat and simple harmonic motion. Three hour laboratory. PREREQUISITE: MM 155 (Calculus 1).

*Offered Spring Semester*

**MP 232—UNIVERSITY PHYSICS 2**

5 credits

Continuation of MP 132. Topics include: electrostatics, Coulomb's Law, Gauss's Law, Kirchoff's Laws, magnetostatics, Ampere's Law, Faraday's Law and Lenz's Law. Demands command of calculus, vector algebra, and vector analysis. PREREQUISITE: MP 132 & MP 255 (Calculus 2).

*Offered Fall Semester*

**MP 332—UNIVERSITY PHYSICS 3**

5 credits

Continuation of MP 232. Topics include: Maxwell's equations, electromagnetic waves, oscillators, physical and geometrical optics (including matrix approach to optics); concepts of special relativity; Bohr model of the atom, introduction to Schrodinger equations, wave functions and probability amplitudes. Three hour laboratory. PREREQUISITE: MP 232 and MM 355 (Calculus 3).

*Offered Spring Semester*

**MP 103—INTRODUCTION TO ASTRONOMY 1**

4 credits

General survey course tracing the development of man's conception of the universe and his place in it. Emphasis on recent developments in planetary science and astronomical instruments. Evening laboratories include Fall constellation identification, use of telescopes to observe the moon, planets, and other heavenly objects. Observational class project. Some classes will include use of the Springfield Science Museum Planetarium and Observatory. Field trip to local professional observatory. Evening laboratory. PREREQUISITE: MM 073.

*Offered Fall Semester*

**MP 146—RADIATION PROTECTION**

1 credit

The nature of ionizing and its biological effect on the human are discussed. The NCR and Commonwealth rules and regulations relating to radiation protection and monitoring of personnel and patient are presented to the level where the student understands risk versus benefit of medical radiation. Radiation detection equipment and instrumentation are presented so that the student knows applicable radiation detection devices for clinical and emergency situations. The human radiobiological response is covered. Open to other students by permission of instructor. PREREQUISITE: MM 093.

*Offered Fall Semester*

**MP 300—RADIOLOGIC PHYSICS 1**

4 credits

Topics covered are: basic mechanics, mass, force, energy, work momentum, and SI units. Electrostatics, magnetism, basic electronics, x-ray spectra, and the solid state are covered, with laboratory application in radiology. Special topics are: the nature of the photon, ionizing radiation, and the interaction of ionizing radiation with matter via scattering, Photoelectric effect, Compton effect, and Pair Production. Radiation attenuation and absorption coefficients are covered in detail. Open to other students by permission of instructor. Laboratory PREREQUISITE: MM 093.

*Offered Fall Semester*

**MP 401—RADIOLOGIC PHYSICS 2**

4 credits

Expansion of mathematics and topics from MP 145. Also included are chemistry of darkroom chemical reactions, calibration of diagnostic equipment, radionuclides in clinical use, physics of xeroradiography, detailed discussion of x-ray machines and x-ray production. 3 hour laboratory. PREREQUISITE: Math MM 093. Required of students in Department AX. Open to other students by permission of instructor.

*Offered Spring Semester*

**MP 400—NUCLEAR PHYSICS 1**

4 credits

Approximately half of the semester is devoted to understanding nuclear properties of the atom. Energy levels are described according to quantum mechanical theory. Unstable nuclei and radiation processes are detailed: (alpha, beta, positron, gamma, IC) and related to the chart of nuclides, to linear energy transfer, and subsequently to radiobiological response. The remaining time of the semester is used to present the mathematics underlying radioactive decay, half-value layer, nuclides, radioactive-equilibria, and the statistics of the Poisson and normal curve. The mathematics



of target theory and the resulting curves are explained. PREREQUISITE: MM 093.  
Open to other students by permission of instructor. Laboratory.

*Offered Spring Semester*

**MP 150—INDEPENDENT STUDY PHYSICS 1** 1, 2, 3, or 4 credits  
Independent study or laboratory project in physics under direction of instructor.  
Student may propose project or elect to undertake a project of instructor's choice.  
PREREQUISITE: Permission of instructor.

*Offered Fall/Spring/Summer Semester*

**MP 250—INDEPENDENT STUDY PHYSICS 2** 1, 2, 3, or 4 credits  
A continuation of MP 150. PREREQUISITE: Permission of instructor.

*Offered Fall/Spring/Summer Semester*

## Plant Science (See Landscape/Plant Science)

## Political Science

**NI 100—AMERICAN GOVERNMENT AND POLITICS** 3 credits  
An analysis of the way in which politics & political institutions work in American society. The major problems of American democracy are examined; their political, social and economic implications explored; Constitutional rights & freedoms; the federal power structure; changing governmental institutions. No Prerequisites.

*Offered Fall Semester*

**NI 900—DIRECTED STUDY IN POLITICAL SCIENCE** Variable credits  
Semester hour credit will vary from one to three, depending upon the written, agreed-upon, approved, student-professor contracts.

## Psychology and Education

**NP 100—GENERAL PSYCHOLOGY** 3 credits  
This introductory course identifies those scientific methods used to study human behavior. Discussion centers around the contribution of heredity, environment, learning, perception, motivation and emotion in shaping our individual personalities.

*Offered Fall & Spring Semester*

**NP 101, 102, 103—GENERAL PSYCHOLOGY MODULES** 3 credits  
Same course content as NP 100, except course is offered on an Independent Study basis consisting of three one-credit modules. Registration by permission of instructor only.

**NP 101—GENERAL PSYCHOLOGY MODULE - 1** 1 credit  
This module covers general perspectives, careers, scientific study of behavior, states of consciousness, learning by classical and operant conditioning, and memory.

**NP 102—GENERAL PSYCHOLOGY - MODULE 2** 1 credit  
This module includes language theory and development, concept formation, problem solving, and intelligence. It examines motivation and psychological and development. PREREQUISITE: NP 101.

**NP 103—GENERAL PSYCHOLOGY - MODULE 3** 1 credit  
This module explores personality theory and measurement, stress and adjustment, and social psychology. PREREQUISITE: NP 102.

**NP 109—HUMAN RELATIONS AT WORK** 3 credits  
This is a course designed to build a strong self image. Each student has an opportunity to understand that he/she is a functioning human being in the twentieth century and that this is not a task to be taken lightly. He/she will realize that we are all

similar in many ways and that we are also different. Hopefully, this course will help the student establish a philosophy of life that will be very helpful in his/her communications and awarenesses of the future.

*Offered Fall & Spring Semester*

### **NP 300—CHILD & DEVELOPMENTAL PSYCHOLOGY**

3 credits

This advanced course examines the major influences on a child's physical, mental and personality development from conception to adolescence. Information is presented in chronological order to give an integrated view of the child at each major phase of development. An examination of the basic theories and contemporary research suggest some answers for more effective parenting. PREREQUISITE: NP 100 or NP 109.

*Offered Fall & Spring Semester*

### **NP 400—PRINCIPLES OF NORMAL/ABNORMAL BEHAVIOR**

3 credits

A general introduction into the origin, development, degrees of mental disorganization, and the methods of coping with psychological dysfunction. Inquiry will also be made into the theoretical and applied approaches of several of the major schools of thought with regard to helping services. PREREQUISITE: NP 100.

*Offered Fall & Spring Semester*

### **NP 406—PSYCHOLOGICAL ASSESSMENT OF CRIME**

3 credits

This course analyzes the types of people that commit crimes, and presents a psychological profile of the criminal offender. Emphasis is placed on the following criminal situations: arson, rape, terrorism, murder, and political assassination.

### **NP 409—INTRODUCTION TO INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY**

3 credits

The application of basic psychological principles to human problems in industry. Major areas of emphasis will include worker motivation, individual differences, personnel problems, selection and training, job satisfaction, employee attitudes and incentives, industrial mental health, human relations factors and psychological tests used in industry. PREREQUISITE: NP 109 or NP 100.

*Offered Spring Semester*

### **NP 900—DIRECTED STUDY IN PSYCHOLOGY**

Variable credits

Semester hour credit will vary from one to three, depending upon the written, agreed-upon, approved, student-professor contract.

### **ND 120—CAREER PLANNING & DEVELOPMENT**

3 credits

*For students in Student Development, General Studies, or the Technologies.* Systematic career development skills with an emphasis on personal awareness, career exploration, value clarification, decision-making, job market survey, and program development. In addition to the above topics the student will be tested using the following battery to provide more indepth information on each individual: Strong-Campbell Interest Inventory, Self-Directed Search, General Aptitude Test Battery.

*Offered Spring Semester*

## Radiation Therapy Technology

### **AY 104—INTRODUCTION TO RADIATION ONCOLOGY**

3 credits

This course begins with an orientation to the profession followed by a discussion of cancer detection, pathology, and disease management, comparing various treatment modalities. Students are introduced to the biological effects of radiation and to the modes of radiation therapy, including a comparative study of teletherapy units, radioisotopes, and teletherapy vs. brachytherapy. Students are introduced to quality assurance procedures as they apply to radiation therapy. PREREQUISITES: MP 132, MP 146, AA 110. RESTRICTED to AY.

### **AY 209—DOSIMETRY AND TREATMENT PLANNING**

4 credits

This course covers the fundamentals of clinical dosimetry and treatment planning, beginning with a discussion of dosage in radiation therapy, progressing to pre-treatment procedures and to the principles of treatment planning. Consideration is given

to a wide range of therapy techniques and modalities, brachytherapy as well as teletherapy; and students develop facility with dose/time calculations. Principles of practical treatment planning for various body sites are also discussed.

## **AY 304—CLINICAL ONCOLOGY 1**

3 credits

Radiation Oncology is covered on the basis of specific sites: head and neck, lung, breast, GI system, nervous system, and lymphatic system. Discussion includes etiology, epidemiology, pathology and staging, symptoms and diagnosis, treatment and prognosis for each site under consideration; with special emphasis on the role of radiation in cancer management and its relationship to other treatment modalities. **PREREQUISITES:** MB 232, AY 209, concurrent MP 300. **RESTRICTED TO AY.**

*Offered Fall Semester*

## **AY 303—RADIOGRAPHIC IMAGING OF HUMAN STRUCTURE**

1 credit

This course will provide fundamentals of radiographic exposure techniques, latent image formation, processing of radiographs, and the opportunity to examine human structure as it appears through medical imaging. The course is designed for non-radiographers.

## **AY 408—CLINICAL ONCOLOGY 2**

2 credits

This course concludes the discussion of radiation oncology covering bone, soft tissue, skin and pediatric cancers. This is followed by a study of radiation biology covering radiation reactions with matter; intracellular responses; effects on tissues, organs and organisms; and the relationship of these factors to treatment technique. **PREREQUISITES:** AY 302, MP 300, concurrent MP 400. **RESTRICTED TO AY.**

*Offered Spring Semester*

## **AY 103, AY 207, AY 208, AY 301, AY 310, AY 407, AY 410—PRACTICUM**

2, 3, 5, 5, 6, 5, 5, 6 credits

Supervised clinical experience is provided in the Radiation Therapy Department of an affiliated hospital under the direction of qualified staff technologists. Students accumulate approximately 1800 hours of clinical training, including a one semester rotation through the Physics Department, and optional rotations through Radiology and Nuclear Medicine. **RESTRICTED TO AY.**

# Radiologic Technology

## **AX 001, AX 002—CLINICAL ORIENTATION 1 AND 2**

No credit

These courses provide an introduction to the affiliate, the affiliation policies and procedures, and the affiliate Radiology Department. These courses are designed to assure affiliated hospitals that the students will not compromise their high standards of health care. Clinical Orientation I & II are prerequisites for Clinical Practicum I & IV, respectively.

*Offered Winter Intersession Only*

## **AX 111—RADIOGRAPHIC POSITIONING 1**

4 credits

This course provides the basis for performing anatomic positioning. Anatomic positioning is the "art" of radiography. The final product, the radiograph, is dependent upon proper anatomic positioning, as well as the proper technical factors. The ultimate purpose of all positioning is to visualize specific parts of the body, free from superimposition of anatomic structures. This course will include development of psychomotor skills in the application of ionizing radiation to produce diagnostic radiographs. **PREREQUISITES:** LD 095, MM 093 or their equivalent, concurrent AA 101, AA 210, MB 132 and AX 112.

*Offered Fall Semester*

## **AX 112—RADIOGRAPHIC TECHNIQUE 1**

2 credits

An introduction to the imaging techniques, including the production of x-rays, an examination of the imaging system, and the development of the radiograph. **PREREQUISITE:** MM 093 or its equivalent.

*Offered Fall Semester*



# RADIOLOGIC TECHNOLOGY

## **AX 113—PROFESSIONAL ETHICS**

1 credit

The ethics of the relationship between the allied health professional, the law, and medicine will be discussed. Emphasis will be placed upon liability in ethical situations. A seminar format will allow the student the opportunity to discuss his/her ethics in relation to the legalities of the court. Restricted to: AX, AY, and AZ.

*Offered Fall Semester*

## **AX 211—RADIOGRAPHIC POSITIONING 2**

4 credits

This course is a continuation of AX 111, Positioning I. It will deal with the anatomic positioning of the cervical and dorsal spines, and the cranium. The major emphasis will be placed on the various positions of the cranium. PREREQUISITES: AX 111, AX 112, and MB 132.

*Offered Spring Semester*

## **AX 212—RADIOGRAPHIC TECHNIQUE 2**

2 credits

This course offers an in-depth study of the factors affecting image quality (density, contrast, distortion, and definition.) Conversion factors will be utilized for maintenance of the radiographic image quality. PREREQUISITES: AX 112, concurrent AX 213.

*Offered Spring Semester*

## **AX 213, 214, 313, 415, 416—CLINICAL PRACTICUM 1, 2, 3, 4, AND 5**

2, 5, 3, 3, 5 credits

These courses provide a structured clinical experience to assist the student in the application of didactic and laboratory practice in clinical settings, under the supervision of registered technologists. This experience includes an examination of the student's competence, and a continuing evaluation of his professionalism. Clinical Orientation 1 and 2 are required prior to Clinical Practicum 1 and 4, respectively. Successful completion of each course is required to progress to the next practicum.

NOTE: Clinical orientation is offered during the Winter Intersession only.

*Offered Spring, Summer, Fall, Spring, Summer Semesters*

## **AX 311—SPECIAL PROCEDURES IN RADIOGRAPHY**

2 credits

A highly-trained team of professionals is necessary to successfully execute the techniques required to obtain diagnostic information during a special procedure. Special procedures are commonly employed to visualize the vascular system or similar hollow organs or vessels. This course will deal with the procedures, the equipment utilized, and the preparation and performance of the procedures. PREREQUISITES: MB 231, AX 111, concurrent AX 313.

*Offered Fall Semester*

## **AX 312—RADIOGRAPHIC TECHNIQUE 3**

3 credits

This course will review the imaging system, examine the impetus of the human body as the object visualized, and will explore methods of film critique. Also included will be an examination of the fluoroscopic system and automated exposure devices. PREREQUISITES: AX 212, MB 132, and MB 232.

*Offered Fall Semester*

## **AX 411—RADIOLOGIC PATHOLOGY**

1 credit

This course deals with the recognition of gross pathology, and how this recognition of specific gross anatomy may modify the examination. PREREQUISITES: AX 111, AX 211, AX 311, AX 312, and 313.

*Offered Spring Semester*

## **AX 412—ANCILLARY THEORY AND PROCEDURES**

1 credit

A detailed examination of those aspects of radiology not normally included in a structured curriculum. Included will be: computerized axial tomography, nuclear magnetic resonance, digital radiography, thermography, sonography, nuclear medicine, therapy, etc. RESTRICTED TO: AX, AY, and AZ.

*Offered Spring Semester*

## **AX 413—SEMINAR/QUALITY CONTROL**

3 credits

This course will provide the procedures followed in a quality control program, and will examine the benefits of such a program to the radiology department. Also, a review of the entire curriculum of the program, including film critique, will be provided. **PREREQUISITES:** AX 311, and AX 312.

*Offered Spring Semester*

## **AX 414—RADIATION BIOLOGY**

1 credit

This course includes a detailed examination of the effects of radiation on the cell, the systems, and the human being, including both long-term and short-term effects, somatic and genetic effects. **PREREQUISITES:** MB 132, MB 232, and MP 146.

*Offered Spring Semester*

# Respiratory Therapy

## **AR 101—RESPIRATORY THERAPY 1**

4 credits

This is an introductory course covering basic respiratory anatomy and physiology, fundamental theories, equipment and practices of Respiratory Therapy. This course is designed to provide the student with a foundation of knowledge and fundamental theory which will enable the student to grasp more complex theories and practices of Respiratory Therapy in subsequent courses.

*Offered Fall Semester*

## **AR 102—RESPIRATORY ANATOMY AND PHYSIOLOGY**

2 credits

This introductory course includes a study of cardiopulmonary anatomy and physiology, arterial blood gas interpretation and an introduction to cardiopulmonary disease. This course is designed to provide the student with fundamental knowledge and theory which will enable the student to grow more complex theories and practice of Respiratory Theory in subsequent courses.

*Offered Fall Semester*

## **AR 103—RESPIRATORY PHYSICS 1**

3 credits

This course is designed to be an in-depth study of respiratory therapy equipment and the physical principles involved in their use. Emphasis will be placed on the adaptation of physical principles to the manufacture of equipment and the clinical application of respiratory equipment.

Among areas to be discussed are: Primary systems, cylinders, piping systems, gas administration devices, gas-controlling devices and analyzing devices, and manual resuscitators.

*Offered Fall Semester*

## **AR 105—RESPIRATORY THERAPY 2**

4 credits

This course is a continuation of the study of respiratory therapy physics and equipment begun in the first semester. Physics principles are integrated with clinical procedures. Cleaning and sterilization, gas analysis, fluids and humidity and aerosol are the content areas. These are clinical hours. **PREREQUISITES:** AR 101, AR 103, MC 101, MB 132.

## **AR 204—RESPIRATORY PHYSICS 2**

4 credits

This is the second part of a two-semester course which integrates physical principles with their applications to clinical equipment. Application of gas laws, fluidics, gas analysis and basic electronic principles and humidity and aerosol equipment will be covered. **PREREQUISITES:** AR 102, AR 103, MB 132, MC 101.

*Offered Spring Semester*

## **AR 210—RESPIRATORY PHARMACOLOGY**

2 credits

An extensive study in the general application, contraindication, indication, and hazards of pharmacological agents used in the treatment of cardiopulmonary disease and their clinical application. **PREREQUISITES:** AR 101, AR 103, AR 105, MC 101, MC 102, MB 132, MB 232.

*Offered Spring Semester*

## RESPIRATORY THERAPY

### **AR 212—RESPIRATORY REHABILITATION**

5 credits

A study of rehabilitation techniques concentrating on chronic pulmonary disease. The content areas will include symptoms, evaluation, education, therapy and medication. Students will be presented with a comprehensive study of state of the art rehabilitation techniques. **PREREQUISITES:** AR 101, AR 103, AR 105, MC 101, MC 201, MB 132, MB 232.

### **AR 300—RESPIRATORY THERAPY APPLICATION & CLINICAL SCIENCES 1**

3 credits

This course is offered over two semesters and encompasses intensive Respiratory Anatomy and Physiology designed to prepare the student for clinical judgment in Respiratory Therapy. Topics related to Respiratory function, such as pulmonary function testing, respiratory pharmacology, controlled ventilation (physiological aspects) blood gas analysis and acid base balance and breath sounds, are included. **PREREQUISITES:** AR 101, AR 210, MC 101, MC 201, MB 132, and MB 232.

*Offered Fall Semester*

### **AR 303—INTENSIVE RESPIRATORY CARE**

3 credits

An in-depth study of the principles of continuous ventilation resuscitation. All ventilators in common use will be examined in detail and their clinical use will be discussed. Hemodynamic monitoring, flow patterns and critical respiratory care will also be studied. **PREREQUISITES:** AR 101, AR 210, MB 132, MB 232, MC 101, MC 102.

*Offered Fall Semester*

### **AR 304—RESPIRATORY THERAPY 3**

9 credits

An extensive study of the principles and theories of IPPB, incentive spirometry, chest physiotherapy and home rehabilitation. Equipment, facilities and current trends in these areas will be examined. Integration of the various modes of therapy and their clinical application is discussed in this course. **PREREQUISITES:** AR 101, AR 210, MP 132, MB 232, MC 101, MC 201.

*Offered Fall Semester*

### **AR 401—RESPIRATORY THERAPY 4**

4 credits

The clinical, bedside and laboratory application of Respiratory Therapy is presented, utilizing the facilities of affiliated hospitals under supervision of hospital therapists, physicians and adjunct faculty. Clinical affiliation is designed to expose them to an environment to which to perform laboratory and in/out facilities. **PREREQUISITES:** AR 101, AR 210, AR 300, AR 303, AR 304, AR 403.

*Offered Spring Semester*

### **AR 402—RESPIRATORY THERAPY APPLICATION AND CLINICAL SCIENCES 2**

7 credits

This is the second part of a two-part course encompassing intensive Respiratory care, anatomy and physiology diseases. The didactic portion consists primarily of lectures and the clinical hours provide for application of principles learned in the classroom. **PREREQUISITES:** AR 101, AR 210, AR 300, AR 304, AR 303, MC 101, MC 102, MB 132, MB 232.

*Offered Spring Semester*

### **AR 403—PULMONARY FUNCTION TESTING**

2 credits

This course will examine in detail all diagnostic tests in use, their interpretation, and the patterns of various respiratory diseases. This course is primarily taught in the pulmonary lab. Arterial blood gases and their interpretation are covered in depth. **PREREQUISITES:** AR 101 and MP 140.

*Offered Fall Semester*

### **AR 404—HEMODYNAMIC MONITORING**

2 credits

This course is an extensive and thorough study in ECG interpretation and cardiac monitoring. Indications and practical application of monitoring equipment as well as the interpretation and significance of test results will be included. Cardio Pulmonary stress testing, Sevan Gang, central venous pressure measurements and cardio pulmonary physiology will also be studied. **PREREQUISITES:** AR 101, AR 210, AR 300, AR 303, AR 304.

*Offered Spring Semester*



## Small Business Management Option (See Business Administration)

Social Sciences  
(See Economics, History,  
Sociology/Anthropology,  
Psychology and Education, Political Science)

### Sociology/Anthropology

#### **NS 100—INTRODUCTION TO SOCIOLOGY**

3 credits

An introductory course designed to acquaint the student with a working knowledge of the concepts used by sociologists and with the well-established generalizations in the field. Topics to be studied include socialization, culture, population, group processes and social stratification.

*Offered Fall & Spring Semester*

#### **NS 110—INTRODUCTION TO ANTHROPOLOGY**

3 credits

A general introduction to social and cultural anthropology which will explore among the diverse cultures of the world some of the possible variations in technology, economics, social and political organization, art, religion and ideology. Each year the world grows smaller in each area of communication, transportation, and general economic interdependence. However, an understanding of cultural differences among the people of the world is often lacking. Cultural anthropology provides a systematic description and comparison of the ways of life of groups of people throughout the world. An appreciation of the solutions to human problems developed by other cultures allows not only greater perception of our own way of life, but also of the values and goals of others. The fundamental objective of this course is to provide insight into various ways that people respond to basic human needs.

*Offered Spring Semester*

#### **NS 160—MULTICULTURAL/MULTIETHNIC U.S.A.**

3 credits

This interdisciplinary course stresses the importance of a cross-cultural approach in understanding the vast and rich historical contributions of the diverse ethnic and cultural groups that have influenced the American experience. Students learn to appreciate their own ethnic and cultural/familial backgrounds, as well as those of other selected ethnic groups prevalent in the community. A special unit is devoted to Hispanics, the second largest group in the United States, in an effort to understand the sociocultural and linguistic barriers that affect health values, beliefs, and practices.

*Offered Fall Semester*

#### **NS 200—SOCIAL PROBLEMS**

3 credits

This course applies the principles and concepts of sociology to selected aspects of contemporary American society, such as the areas of poverty, crime, urban change, population, alcoholism, role redefinitions, minority group relations and drug addiction. **PREREQUISITE:** NS 100.

*Offered Fall & Spring Semester*

#### **NS 250—SOCIOLOGY OF THE FAMILY**

3 credits

The course will focus on the historical development and change of the family, its structure and functions and its relationship to the other major institutions of society. Although the primary focal point will be the American family, cross-culture comparison will be used especially in the study of marriage and kinship practices. Strong emphasis will also be placed on family change and the family as a social problem

## SOCIOLOGY/ANTHROPOLOGY

including such topics as the single parent, changing sex roles and communes. **PRE-REQUISITE:** NS 100.

*Offered Fall & Spring Semester*

### **NS 300—SOCIOLOGY OF AGING**

3 credits

This course examines aging as a social phenomenon in the United States. Topics include social factors in the aging process, statistical distribution and ecological conditions of aging, and economics, public policy and politics as they relate to old age. **PREREQUISITE:** NS 100.

*Offered Fall Semester*

### **NS 900—DIRECTED STUDY IN SOCIOLOGY/ANTHROPOLOGY**

Variable credits

Semester hour credit will vary from one to three, depending upon the written, agreed-upon, approved, student-professor contract.

## Solar Energy Option to Heat/Power/Air Conditioning

### **HS 210—INTRO. TO ALTERNATIVE ENERGY SYSTEMS**

2 credits

A survey of currently practical energy conversion schemes with emphasis on other than solar energy. The course begins with a review of global energy use and availability which the theory, operation of ocean thermal differences, wind, wave, ocean current, and biogas and biomass systems. The problems of energy storage and distribution will be covered for each system.

*Offered Spring Semester*

### **HS 310—SOLAR ENERGY 1**

3 credits

A study of the basic concepts in solar usage and of the methods of passive heating. Rules of thumb for glazing area, mass volume and surface area and alternative designs will be presented. Basic concepts include heat loss calculations, insulation and heat gain calculations, sun path diagrams, shading, building orientation and shape and greenhouse effect. Class meets three hours per week for lecture.

*Offered Fall Semester*

### **HS 430—SOLAR ENERGY 2**

4 credits

A study of the active solar heating systems and their components. Calculations include collector efficiencies, heat gains, heat loss, and pay back. Installation of solar domestic hot water systems is emphasized. Laboratory exercises include the assembly of a solar hot water system, a thermal air siphoning panel, and hot water panel. Field trips to actual installations reinforce the class work. Class meets two hours per week and laboratory 4 hours per week.

*Offered Spring Semester*

## Spanish (See Foreign Languages)

## Surgical Technology

### **AO 100—ORT 1**

5 credits

A combined lecture and laboratory course which develops competency in and performance of certain generally accepted routine procedures and techniques. Units in this course include: related nursing procedures, medical terminology, human relations, modules of specific aspects of first aid, and cardiopulmonary resuscitation.

*Offered Fall Semester*

## **AO 200—ORT 2**

5 credits

A continuation of AO 100. This course is a combined lecture and laboratory course in which the student will learn aseptic techniques, instrumentation, draping techniques, positioning, etc. in preparing for field experience. **PREREQUISITE:** AO 100.

*Offered Spring Semester*

## **AO 301-303—ORT 3**

9 credits

A general course presenting material in sequence that will coincide with the practical experience of the technician in the operating room, and delivery room, under the direct supervision of Registered Professional Nurses. Students will be scheduled for clinical affiliation upon completion of Semester 1 and 2 requisites.

*Offered Fall Semester*

## **AO 302—PHARMACOLOGY/ORT**

3 credits

This course provides a background in the drugs used in the operating room, emergency room and delivery room. Handling, preparation, dosage, contra-indication and toxic effects are stressed. **PREREQUISITES:** Completing Semester 1 and 2.

*Offered Fall Semester*

## **AO 400—SEMINAR/SURGICAL**

3 credits

This course provides the total picture of the operating room patient in the surgery. Guest lectures will elaborate on specialties involving surgical procedures as they relate to patient care. A review and discussion of the students' field experiences are an integral part of this course offering. A modular unit in Bio-Medical instrumentation is included in this course. **PREREQUISITE:** AO 301.

*Offered Spring Semester*

## **AO 401-402—ORT 4**

10 credits

This course provides theoretical background to prepare an operating room circulator technician. Advanced operating room techniques, supervisory skills, interpersonal relationships, circulation duties, procedure analysis and ethics are included. A rotating clinical experience through Emergency Room and surgical specialties which deals with: plastic surgery, ophthalmic surgery, neurosurgery, orthopedic surgery, urological surgery, vascular and chest surgery. **PREREQUISITE:** Completing Semesters 1, 2, and 3

*Offered Spring Semester*

# Telecommunications Technology

## **GT 110—FUNDAMENTALS IN TV WRITING**

3 credits

In this course students learn the fundamental principles of writing for television. Writing for drama, commercials, news, and public affairs are covered. Students are taught how to write straight, still picture and moving picture copy. The traditional video cues for directors are also taught. Students in this course do a considerable amount of writing.

*Offered Fall Semester*

## **GT 120—VIDEO TECHNIQUES**

3 credits

An overview of the prime skills which video production utilizes, such as planning, writing, practicing, staging, camera handling, audio pickup, video switching, mixing, lighting, and editing. Each week a new one of these elements is presented in a lecture-demonstration, followed by practice sessions in the studio. Emphasis is placed on competency in operating the equipment, and efficiency in the use of time.

*Offered Fall Semester*

## **GT 130—VIDEO PRODUCTION**

3 credits

During the first part of the semester, each student plans and directs a two-camera video demonstration of how-to-do some particular task, the subject being of their choice. In the second part of the semester, five student production crews are formed. Each crew produces a mini-documentary on a topic of current news interest, using electronic field production equipment for a major portion of the program.

*Offered Fall Semester*



# TELECOMMUNICATIONS TECHNOLOGY

## **GT 140—COMMUNICATION IN TODAY'S WORLD**

3 credits

In this course the wide spectrum of communications—from interpersonal to space communications satellite—is explored. The question as to how good human relations helps to develop good TV programming is examined. The course also deals with the nature of television, exposing its acknowledged attributes. Understanding the nature of TV can help a professional channel the power of television in directions that will help and not hurt viewers. It is hoped those who take the course will develop a respect for TV's potential power.

*Offered Fall Semester*

## **GT 210—ADVANCED TV WRITING**

3 credits

This course is devoted to script writing for production. What is produced will be considered airable. Much of the class time is devoted to writing, based on exercises designed and offered by the instructor.

*Offered Spring Semester*

## **GT 220—TV PRODUCING AND DIRECTING**

3 credits

Emphasizes the functions of producers and directors who have the financial and creative responsibilities in production. Topics covered are: staging actions, marking scripts, placing cameras, directional decisions, uses of music and effects, video editing and dubbing, quality control, and post-production revision. Making accurate estimates of time and costs involved in video production is practiced. Four student crews, each produce and direct a dramatic program designed by the instructor.

*Offered Spring Semester*

## **GT 230—SPEAKING ON TV**

3 credits

Essentially a speech course, but geared to television presentation. The student learns how to communicate to an audience while on camera. Doing commercials, the news, interviewing, hosting panels are stressed. The micro teaching method is employed to evaluate each student's performance.

*Offered Spring Semester*

## **GT 240—ANALYSIS OF COMMERCIAL & PUBLIC TV**

3 credits

This course explores the anatomy of both commercial and public television, checking out their history, their societal commitments, how they function and how they subsist. Their differences and similarities are exposed. Some practical tips as to how to succeed to both sectors are offered.

*Offered Spring Semester*

## **GT 310—INSTRUCTIONAL TV TECHNIQUES**

3 credits

On the premise that instructional video is produced in order to influence its audience, the psychology of the general viewer is examined by means of insights from the social sciences. Techniques found effective in TV advertising are adapted to instructional purposes, with guidance from the nationally seen C.T.W. production. During the workshop portion of this course, practice is gained in the use of chroma-key, waveform monitoring, photographic inputs, and advanced VTR-VTR editing controllers.

*Offered Fall Semester*

## **GT 320—TV JOURNALISM**

3 credits

The fundamentals in editing (assignment development and newscast production), writing and rewriting and producing are stressed, as well as learning how to capture news with film and video tape. Reporting and interviewing exercises are offered. Through this course students learn to compile information and colate it, unearh evidence and appraise it, budget their time and energy and develop an appreciation for accuracy. This is a workshop course.

*Offered Fall Semester*

## **GT 330—TV PRODUCTION PRACTICUM**

3 credits

This course is taken at WGBY-TV or any other broadcasting, cable, industrial, medical or educational TV center. Students work studio camera, learn to operate video tape machines, work on console board, learn to operate slide and film chain machines. The station's professional staff teaches this course.

*Offered Fall Semester*

**GT 340, GT 450—TV HONORS (2 courses)**

4 credits each

This course is open to eight students. They produce video tapes prepared by faculty. The students are divided into two groups of four each. Each group constitutes a production team. They produce two instructional TV presentations a week. During the semester each member of a team has experience working as a producer, director, cameraperson, floor manager. The groups are responsible for dubbing, filing finished production. The presentations are produced at STCC's TV center. To qualify for this course a student must have an A or B + in his major.

**GT 410—INSTRUCTIONAL TV PRODUCTION**

4 credits

The class divides into three groups, each of which produces a magazine-format informational video program on a different topic. Each student in a production group writes, produces, and directs his own individual short part of his group's program. Thus, each student has a sub-section of an assembled program for which he/she was solely responsible. Students are urged to keep a copy of this work for resume use.

*Offered Spring Semester***GT 420—ADVANCED TV JOURNALISM**

3 credits

A workshop course. More advanced editorial techniques are taught and practiced.

*Offered Spring Semester***GT 430—ADVANCED TV PRODUCTION PRACTICUM**

3 credits

Working as a production assistant on WGBY's regular TV shows, or working in a similar capacity at Channels 22 and 40, or any other broadcasting, cable, industrial, medical, or educational TV center.

*Offered Spring Semester***GT 440—CABLE TELEVISION**

3 credits

Explores cable television distribution in terms of its potential to serve the public interest. Major topics are: technical characteristics of cable and broadcast compared, economics of paying for TV by advertising or by direct payment public-access to cable channels, the rise of specialized cable networks fed by satellites, digital signal-return via cable to central computers, and housetop satellite receivers.

*Offered Spring Semester*

**Word Processing**  
**(Options to Executive Office Administration**  
**and Legal Office Administration; See Office**  
**Systems)**

**Word Processing Management**  
**(See Office Systems)**

Directories





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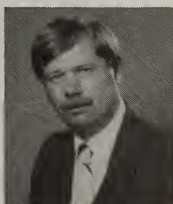
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# Administrative Directory

## *Administrative Offices*

President	Andrew M. Scibelli	16/233	3841
Exec. Vice Pres./Academic Affairs	John H. Dunn	16/223	3845
Dean of Administrative Services	Cheryl G. Baraldi	16/205	3802
Dean of Admissions/Public Relations	Ray M. DiPasquale	16/121	3855
Dean of Community Services	Teresa A. Burr	15/SSC	3868
Dean of Continuing Education	Thomas Holland	15/SSC	3863
Dean of Student Services	William M. Manzi	16/126	3454
Acting Director of Personnel	Myra D. Smith	16/245	3833
Director of Computer Services	L. Douglas Walter	17/325	3350
Assistant to the President	James J. Dowd	16/247	3619
Staff Asst./Sec. to the President	Gladys S. Hardy	16/233	3841

## *Academic Division Chairpersons*

Business Administration	Donald Bready	17/217	3324
Engineering Technologies	John T. Donohue	20/121	3501
General Studies/Developmental Education	Antoinette L. Burgess	15/200	3477
Health/Human Services	Mary E. O'Leary	20/202	3609
Humanities	Jewel Rentzschke	13/104	3655
Liberal Arts Transfer	Virginia B. Kerr	17/329	3352
Math, Sciences & Engineering	Jack Barocas	17/315	3322
Nursing	Eileen Neville	20/303	3505
Social Sciences	Carol Roberts	17/329	3351

## *Academic Support Services*

Assistant Dean of Academic Affairs	Richard C. Parkin	16/337	3460
Assistant Dean for Development	Gail Carberry	16/331	3842
Registrar	Athena Verros	15/SSC	3857
Director of Library Services	Tamson Ely	27/101	3302
Cataloger/Dir. of Technical Services	Nancy McAuliffe	27/107	3486
Reference Librarian	Barbara Wurtzel	27/121	3476
Director of Academic Computing	Francis D. Driscoll	16/293	3720
Director of Bilingual Services	Beatrice Szlajen	16/148	3482
Director of Cooperative Education	Peter L. Martinello	16/285	3807
Director of Institutional Research	Vacant	16/331	3832
Asst. Dir. of Grants/Dir., STCC Foundation	Monroe H. Benson	16/331	3842

## *Administrative Services*

Asst. Dean of Administrative Services	Katharine T. Reichert	16/203	3806
Comptroller	Tim Braim	16/203	3612
Superintendent, Bldgs. and Grounds	Albert Desautels	16/203	3301
Chief of Security	Philip LaBranche	7	3800
Staff Asst., Administrative Serv.	Richard Kretschmar	16/216	3317
Staff Asst., Administrative Serv.	Alicia Wilk	16/203	3861

## *Admissions/Public Relations Services*

Director of Placement	C. Bruce Zumwalt	16/251	3623
Acting Assistant Director of Admissions	Laura Santaniello	16/119	3776
Assoc. Dir. Admissions/Transfer Affairs	Patrick Tighe	16/107	3862
Director of Media Production Center	Vincent P. Yacovone	13/320	3715
Coordinator of Publications	Setta A. McCabe	16/269	3830

## *Student Services*

Assistant Dean of Student Services	John A. D'Orazio	16/127	3863
Director of Financial Aid	Joel A. Friedman	15/SSC	3613
Director of Student Activities	Paul M. Simon	6	3626
Director of Veterans Affairs	David Sarrette	15/SSC	3869
Director of Athletics	J. Vincent Grassetti	6	3511
Director of Counseling	Kent A. Goodchild	16/111	3616
Asst. Director of Financial Aid	Marilyn Sutlin	15/SSC	3816
Financial Aid Counselor	Mary Forni	15/SSC	3817
College Nurse	Joan Richers	16/105	3510

## *Division of Continuing Education*

Director of Con., Seminars, Non-Credit	Mary Breeding	15/SSC	3865
Staff Asst., GED & Testing Coordinator	Felicita Mazzuchelli	15/SSC	3867

*Note: "SSC" refers to the Student Services Center, first floor of Building 15.*



## Department Chairs/Program Coordinators

Advanced Metals Machining	Otto Paradzick	28/204	3752
Art	Edith Bugbee	28/211	3754
Automotive Technology	Richard Cormier	25/200	3757
Biological Sciences	James Curran	20/215	3513
Bio-Medical Instrumentation Technology	Kenneth Dupont	20/522	3508
Business Administration	John Godfrey	17/209	3326
Chemistry	Kenneth Killings	17/301	3330
Civil Engineering Technology	William Tuthill	17/302	3380
Computer Information Systems/Data Proc.	Victor Bouchard	17/245	3329
Computer Maintenance Technology	Neil Bergman	17/631	3433
Computer Science Transfer	Antonio Silvestri	17/310	3333
Cosmetology	Sophie Drost	20/427	3514
Dental Assistant	Carol Glauquinto	20/203	3633
Dental Hygiene	Denise Ryan	20/242	3504
Developmental English	David Winsper	13/217	3674
Drafting and Design Technology	Otto Paradzick	28/204	3752
Early Childhood Education	Sandra Graham (Acting)	13/308	3681
Economics	Siegfried Rentzschke	17/231	3344
Electrical Technology	Richard Sturtevant	20/120	3531
Electronic Technology	Neil Bergman	17/631	3433
Engineering and Science Transfer	William White	17/309	3333
English	John Gately	13/210	3668
Environmental Technology	William Gaitenby	32/103	3761
General Studies	Antoinette Burgess	16/257	3477
Graphic Arts Technology	William Gibbs	14/101	3766
Heat/Power/Air Cond. Technology	William Gaitenby	32/103	3761
History/Political Science	Thomas Boyle	17/335	3355
Human Services Associate	Mary K. Bennett	20/352	3520
Instrumentation Technology	Paul Barufaldi	20/528	3552
Landscape/Plant Science Technology	H. Alan Crowe	17/339	3357
Laser Electro-Optics Technology	Neil Bergman	17/631	3433
Law Enforcement/Criminal Justice	Bert Scannapieco	17/225	3325
Liberal Arts Transfer	Virginia Kerr	17/329	3352
Machine Design Technology	Otto Paradzick	28/204	3752
Mathematics	Robert Parenteau	17/343	3359
Medical Assistant	Mary Ellen Harbeck	20/332	3517
Medical Laboratory Technician	Joanne Cerrato	20/350	3516
Microprocessing Technology Option	Neil Bergman	17/631	3433
Music	Anne Lemieux	13/115	3663
Nuclear Medicine Technology	Margaret McCarthy	17/341	3358
Nursing	Eileen Neville	20/303	3505
Office Systems/Secretarial Sciences	Beverly McCarthy	20/416	3545
Physical Therapist Assistant	Elizabeth Burke	20/320	3539
Physics	William Mullett	17/337	3356
Psychology	James Fitzgibbons	17/235	3346
Radiation Therapy Technology	Julianne Morrison	20/420	3525
Radiologic Technology	Gerard Staats	20/207	3502
Respiratory Therapy	George Ponte	20/422	3526
Sociology/Anthropology	Mary Jane Pi-Sunyer	17/227	3342
Solar Energy	William Gaitenby	32/103	3761
Surgical Technology	Rita LaBrecque	20/344	3521
Telecommunications Technology	Nathan Rutstein	13/323	3653

## Faculty and Administration

- Abbott, Hilton M., B.S., University of Vermont; M.S., Eastern Michigan University, Physics.
- Albano, Roberta, A.S., Westbrook College; R.D.H., Mass. Nat'l Board Cert.; B.A., Springfield College; M.Ed., Springfield College; Dental Assistant
- Allen, Mary C., B.A., Regis College; M.Ed., Westfield State College; Early Childhood Education
- Amidon, H. Estelle, Cert., Forms Analyst
- Andrew, Kathleen, B.A., Trinity College; M.A., Boston College, Developmental English
- Angers, Homer R., B.S., Westfield State College; Automotive Technology
- Asonevich, Bernard, A.E., Vermont Technical College; B.S.M.E., Tri-State University, Machine Design Technology
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- Barone, Susan W., A.S., Middlesex Community College; Cert., Henry Ford Hospital; B.S., Eastern Michigan University, Nuclear Medicine Technology
- Barry, Daniel P., B.S., University of Massachusetts; M.Ed., University of Massachusetts, Landscape/Plant Science Technology
- Barry, Sally E., B.S., University of Maine; M.Ed., Westfield State College, Nursing
- Bartlett, Faye-Marie, R.N., Mercy Hospital School of Nursing; B.S.N.Ed., University of Rochester, Nursing
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- Beauchemin, Lillian Morrison, B.S., Western New England College; M.S., Western New England College; Computer Information Systems/Data Processing
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- Breeding, Mary M., B.S., University of Florida; M.S., Virginia Commonwealth University; Director of Conf., Seminars, Non-credit
- \*Bugbee, Edith M., B.F.A., University of Massachusetts; M.A.T., University of Massachusetts, Art
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- Jimenez, Juan, B.S., University of Massachusetts; M.Ed., University of Massachusetts; D.Ed., University of Massachusetts; Mathematics, Biological Sciences, Special Services

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- Mazzuchelli, Felicita, Fisher Business College, Administrative Assistant for Continuing Education

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- \*DEPARTMENT CHAIRPERSON  
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Course descriptions are listed on pages 149 - 247 in alphabetical order by department (Advanced Metals Machining through Telecommunications Technology.) The indexes on the following pages will assist you in locating a specific course description.

### Index of Department Codes

Each course number begins with the 2-letter prefix which is the department code. This index lists the department codes in alphabetical order.

### Index of Course Subjects

If you know you are looking for a course in a specific department, such as Graphic Arts Technology, you may use this index to find that the department code for Graphic Arts is GA, and that course descriptions for that department begin on page 200.

## Index of Department Codes

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AA	Medical Assistant
AC	Cosmetology
AD	Dental Assistant
AH	Dental Hygiene
AL	Medical Laboratory Technician
AM	Human Services Associate: Generalist Option
AM	Human Services Associate: Gerontology Option
AN	Nursing
AO	Surgical Technology
AP	Physical Therapist Assistant
AR	Respiratory Therapy
AX	Radiologic Technology
AY	Radiation Therapy Technology
AZ	Nuclear Medicine Technology
BA	Accounting
BD	Computer Information Systems/Data Processing
BE	Executive Office Administration/Exec. Sec.
BF	Finance
BH	Data Entry/Word Processing
BI	Marketing
BJ	Administrative Bookkeeping
BK	Management
BL	Legal Office Administration/Legal Sec.
BM	Medical Office Administration/Medical Sec.
BO	Clerical Office Assistant
BP	General Business
BW	Word Processing Management
EB	Bio-Medical Instrumentation Technology
ED	Computer Maintenance Technology

EE	Electrical Technology
EL	Laser Electro-Optics Technology
ET	Electronic Technology
ET	Microprocessing Technology Option
FA	Advanced Metals Machining Technology
FB	Mechanical Technology
FD	Machine Design Technology
GA	Graphic Arts Technology
GC	Civil Engineering Technology
GD	Drafting and Design Technology
GL	Landscape/Plant Science Technology
GT	Telecommunications Technology
HE	Environmental Technology
HP	Heat/Power/Air Conditioning Technology
HP	Solar Energy Option
IA	Automotive Technology
IT	Instrumentation Technology
LT	Fine Arts
LD	Developmental English
LE	English
LF	Foreign Languages
LM	Music
LX	Philosophy
MB	Biological Sciences
MC	Chemistry
ME	Engineering Sciences
ME	Computer Science Transfer
MM	Mathematics
MP	Physics
NC	Early Childhood Education
NE	Economics
NH	History
NI	Political Science
NL	Law Enforcement/Criminal Justice
NP	Psychology
NS	Sociology/Anthropology

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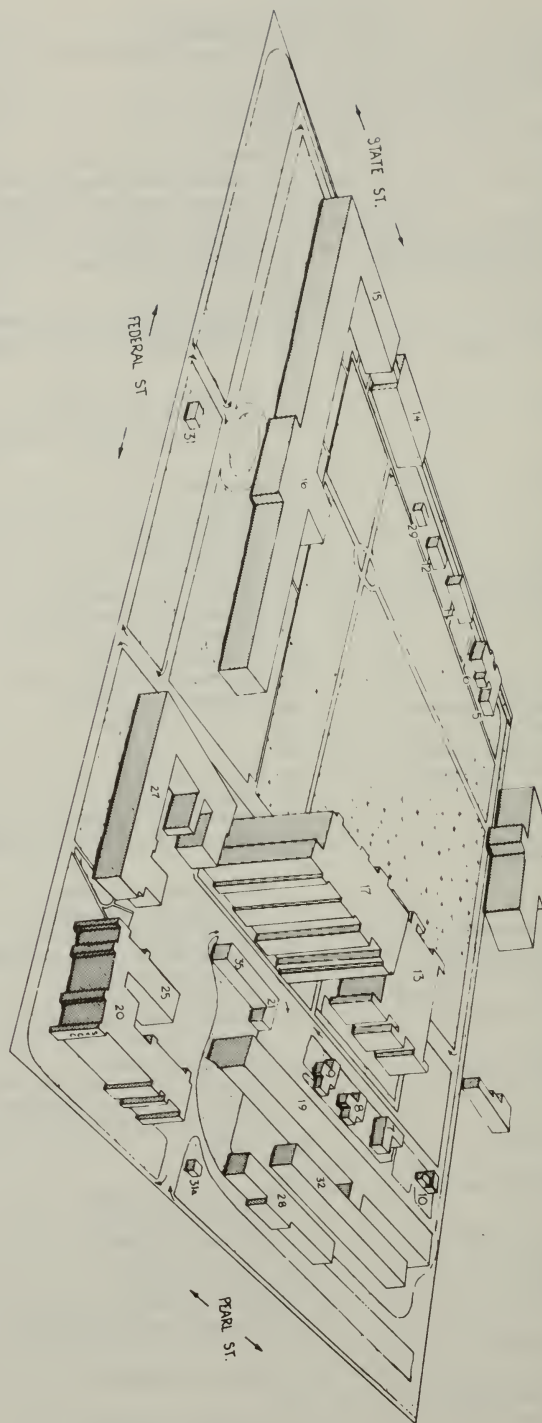
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Map



- 1 Commandant's Home, Owned by National Park Service
- 8 Student Activities Athletics
- 5 )
- 6 ) Under Jurisdiction of STCC
- 10 )
- 11 )
- 12 Pottery Studio
- 13 HUMANITIES BUILDING
  - Developmental English
  - Early Childhood Education English
  - Environmental Technology
  - Foreign Languages
  - Music
  - Ram Office
  - Telecommunications Technology
- 14 Graphic Arts Technology
- 15 GARVEY HALL SOUTH
  - Student Services Center
  - Cashier
  - Financial Aid
  - Registrar
  - Veterans' Affairs
  - Division of Community Services
  - Division of Continuing Education
  - Drafting and Design Technology
  - Machine Design Technology
- 16 GARVEY HALL
  - Administration
  - Admissions
  - Business Office
  - College Health Service
  - Cooperative Education
  - Counseling Center
  - Dean of Student Services
  - General Studies
  - Placement
  - Radio Station WTCC
  - Special Student Services
  - University Without Walls
  - Vending food area
- 17 PHYSICAL SCIENCE BUILDING
  - Business Administration
  - Chemistry
  - Civil Engineering Technology
  - Computer Center
  - Computer Maintenance Technology
  - Computer Science
  - Computer Information Systems/Data Processing
  - Economics
  - Electronic Technology
  - Engineering and Science Transfer
  - History
  - Individualized Learning Center
  - Landscape/Plant Science Technology
  - Laser Electro-Optics Technology
  - Law Enforcement/Criminal Justice
  - Liberal Arts Transfer
  - Mathematics
  - Physics
  - Psychology
  - Sociology and Anthropology
- 19 Weight Room
- 20 ALLIED HEALTH BUILDING
  - Afro-Am
  - Armory Square Day Care
  - Cafeteria
  - Biological Sciences
  - Bio-Medical Instrumentation
  - Cosmetology
  - Dental Assistant
  - Dental Hygiene
  - Electrical Technology
  - Fire Protection and Safety Technology
  - Human Services Associate
  - Instrumentation Technology
  - Medical Assistant
  - Medical Laboratory Technician
  - Nuclear Medicine Technology
  - Nursing
  - Office Systems/Secretarial Sciences
  - Physical Therapist Assistant
  - Radiation Therapy
  - Radiologic Technology
  - Respiratory Therapy
  - Surgical Technology
  - Women's Center
- 21 Greenhouse
- 25 Automotive Technology
- 27 Bookstore
  - Gallery
  - Gallery Players
  - Library
  - Storekeeper and Maintenance Shops
- 28 Art
  - Advanced Metal Machine Technology
  - Machine Design Technology
- 31 Gatehouse
- 32 Heat/Power/Air Conditioning Technology
  - Solar Energy
- 35 Civil Engineering Lab
  - Plant Science Lab











GREENFIELD

EXIT 4

MASSACHUSETTS TURNPIKE

RT.90

BOSTON

EXIT 6

RT.91

RT.291

RT.291

ARMORY STREET

ARMORY STREET  
EXIT

ARMORY STREET  
(SOUTH)

TAYLOR STREET

ARMORY STREET

RT.91

WORTHINGTON STREET

PEARL STREET

BYERS STREET



FEDERAL STREET

STATE STREET EXIT

STATE STREET

RT.20

RT.57

HARTFORD

## Directions to STCC

### From 91 going South:

Follow Hartford signs  
to Exit 7, Springfield  
Center

Follow State Street sign  
to first light, go left  
under highway to  
State Street

Take State to Federal Street

### From 91 going North:

Take Exit 4, Broad Street  
Follow East Columbus Ave.  
to 3rd light, turn  
right on State Street  
Take State to Federal  
Street

### From Turnpike:

Take Exit 6  
Turn left onto Rt. 291  
Take Armory Street Exit  
Go around rotary and take  
Armory Street going South  
Stay on Armory Street until  
you come to Federal Street

Campus Security Officers Will Direct You To Appropriate Parking Area



**SPRINGFIELD TECHNICAL  
COMMUNITY COLLEGE**  
ONE ARMORY SQUARE SPRINGFIELD, MASSACHUSETTS